

BEARINGS FROM POLAND

COWIE FLEET

NEWS SUMMARY

GENERAL Vorster backs down on Namibia

Business Equities gain 4.1 in active trading

Equities gain 4.1 in active trading

Equities gain 4.1 in active trading

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U.S. President shows hand in NATO and Middle East

Europe fears call by Carter for more defence spending

BY MALCOLM RUTHERFORD. President Carter is expected to call for a major review of the workings of the Atlantic Alliance when he addresses the NATO summit meeting in London today.

Dearer food keeps up output prices

BY PETER RIDDELL, ECONOMICS CORRESPONDENT

A FURTHER sharp rise in the costs and prices of food manufacturers is delaying the long-awaited slowdown in the rate of increase in industry's factory gate (output) prices.

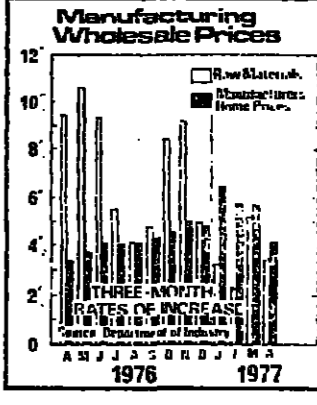


Table with 3 columns: Year, Output (home sales), Materials. Rows for 1976 and 1977.

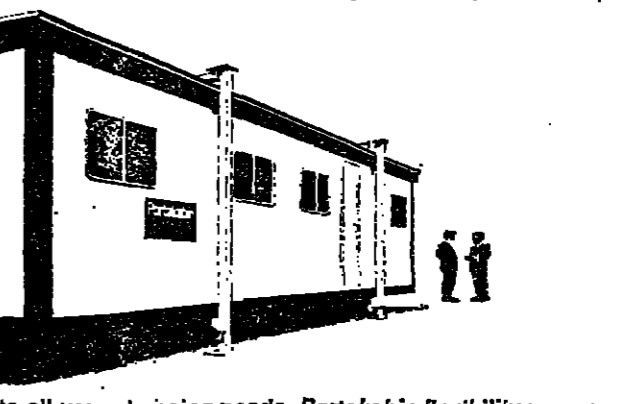
Signs that Paisley may be willing to end strike

BY ROY HODSON IN NORTHERN IRELAND. THERE WERE signs yesterday that the Rev. Ian Paisley might be willing to call off the Protestant Loyalist strike in Ulster in return for new assurances about security measures against the IRA.

U.S. Steel to raise prices 3.5%

BY STEWART FLEMING NEW YORK, May 9. U.S. STEEL, the company which dominates the U.S. steel industry and accounts for about one-fifth of raw steel production, today announced price increases much lower than those proposed by Republic Steel on Friday.

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Table of price changes yesterday with columns for various commodities and their price movements.

Table of features and other pages with columns for various topics and page numbers.

Form for requesting more information about Portakabin units, including fields for name, address, and telephone.

LOMBARD

In defence of gas guzzling

BY ANTHONY HARRIS

PRESIDENT CARTER has received much praise for his attempt to persuade his country to take more energy seriously, and a good deal of it is no doubt deserved; but I am sorry to see that more attention has not been paid to his surrender to a fashionable plague of our time—the endless laying down of technical standards. The President's determination to reduce the lopsided protection of the U.S. consumer from world energy costs is welcome and courageous; but his proposed special tax on big cars, like the older mandatory demand for improved fuel economy, is pure muddled thinking.

Better value

In any case you cannot measure the economy of a car simply in miles per gallon. Fuel is not the only running cost of a car, and miles do not measure the service delivered. The measure for the user is miles per dollar, including repairs and replacements; and for the manufacturer it is the cost of producing a car with a target price. It happens that cars with big, under-stressed engines tend to last longer than small, highly-stressed ones (some of which also impose high stresses on the driver); and if high fuel costs also depress the second-hand price of big cars, they become even better value.

TV/Radio

Table with columns for BBC 1, BBC 2, and F.T. CROSSWORD PUZZLE No. 3376. Includes program listings and crossword clues.

F.T. CROSSWORD PUZZLE No. 3376

Grid for crossword puzzle No. 3376 with numbers 1-28.

- ACROSS
1 King, one higher, and another from the pack should include all the winners (4,4)
5 One who shoots and hits the target is twenty. Right? (6)
10 Hood from the south has a threatening look (5)
11 Buying and selling foreign currency — of a certain brand? (9)
12 Interrupted and died with nasty burst inside (9)
13 Run round me—it requires stomach (5)
14 Substitute twice as much (6)
15 Spacious but not spacious enough it's said. (7)
16 More heathy looking fish? That's right? (7)
20 Force with a gun is close (6)
22 Listen secretly to editor being recorded (5)
24 One who dresses fish gets a nasty shiner (9)
25 Female changing and hesitating (9)
26 Name at a former time or old occasion (5)
27 The most recent news from the French river (6)
28 Non-competitive game should be amicable (8)

Down crossword clues:
1 Live in only two-thirds of residence (6)
2 Angry remark may be cryptically puzzling (8)
3 Deficiency in a sense could make London clubs nice (6, 9)

RACING

BY DOMINIC WIGAN

Bessie Wallis looks good for Oaks run-up

SOME highly-rated fillies are expected to travel to Epsom for the Oaks in three weeks' time. Bessie Wallis, who has been the favourite for the Oaks since she won the 2-year-old race at Newmarket in October, is expected to be the favourite for the Oaks in three weeks' time.

four-length winner of the Sandown Park stakes in which Bessie Wallis was his closest pursuer. He will be disappointed if Royal Pinnacle fails to complete the double.



CHAMPION JOCKEY Pat Eddery, who rides St. Theresa, Dominic Wigan's nap at York to-day.

The probable outcome is a victory for the once-raced Bessie Wallis over Pulchella. At present, they stand at 20 to 1 and 40 to 1 respectively in the Oaks market.

Bessie Wallis, who is without the benefit of a previous run this term, gained many admirers when slaying 24 rivals headed by Daviot in the Houghton Stakes at Newmarket in October.

SALEROOM

BY ANTONY THORNCROFT

Record for greenstone mask

A TEOHUACAN pale greenstone mask, produced in central Mexico between 750 and 950 A.D., sold to a London dealer for £59,000 at Sotheby's yesterday, a record auction price for a work of pre-Columbian art.

Also at Sotheby's, a Tibetan and Asian sale realised £24,955. Mexico between 750 and 950 A.D., sold to a London dealer for £59,000 at Sotheby's yesterday.

be an informative race, I am prepared to go along with the Marriott stables representative, for whom Hastings-Bass has secured Pat Eddery.

FILM AND VIDEO

BY JOHN CHITCOCK

New areas of growth for the TV industry

AS ECONOMIC anxieties surround a success industry—the post-war years—television—relief in the form of new areas of growth could be close at hand. The slightly depressed feelings of the TV industry are due to market saturation point approaching in U.K. 2.51m. sets in 1976 against 2.55m. in 1975 and 2.96m. in 1974, and fringe issues such as an impending jump in the licence fee.

sales volume by 70 per cent. in the first quarter of 1977 compared with the same period a year earlier. Production of the Betamax players is being lifted to 1m. units for this year, and Sanyo, Toshiba, Aiwa, Pioneer, and Zenith (in the U.S.) are also going to produce Beta players.

programmed videocassettes have been insignificant, not helped by the relatively high cost of tape. This is where hopes for video disc now rise strongly. In the U.S. the Corporation of America has actually estimated a price for a new feature film on video that says that it will be priced on five-disc at \$10 to \$15 and some other for even less.

Stimulus

Yet events have been happening rather suddenly in the past few months and there is now more evidence to suggest that videocassettes and other new devices could provide a major stimulus to the TV industry (if not to the broadcast industry).

Annual sales

Meanwhile, back in down-market Europe, BASF has come up with some interesting forecasts which suggest that the West German leader in the raw tape market is also getting very interested in the prospects.

Only \$500

The MCA partnership in Philips in the video disc market is more like succeeding as a game. RCA is now committed this year, does that a final decision to enter the market has yet to be made, an important change of strategy has come from Philips, who are going to demonstrate its going for the first time in the U.S. the forthcoming Video Disc conference in London.

APPOINTMENTS

Mr. H. R. Scott has retired as managing director of ECONA, but remains chairman. He has also retired as a director of group subsidiaries. Mr. D. E. Rogers has been appointed managing director of ECONA and chairman of MORRISON SUPERMARKETS in succession to Mr. S. Towers, who has retired.

Reorganisation in Econa group

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RADIO 1

Cardiff Midday Prom. part 1: Delia-Joe. 1.00 News. 1.15 The Area. 1.30 Report at 1.30. 1.45 Sale of the Century. 2.00 News Records of music by Ray, S. and J. 2.15 Piano Recital (S). 2.30 Jazz Today (S). 2.45 News. 3.00 Homebrew. 3.15 News. 3.30 News. 3.45 News. 4.00 News. 4.15 News. 4.30 News. 4.45 News. 5.00 News. 5.15 News. 5.30 News. 5.45 News. 6.00 News. 6.15 News. 6.30 News. 6.45 News. 7.00 News. 7.15 News. 7.30 News. 7.45 News. 8.00 News. 8.15 News. 8.30 News. 8.45 News. 9.00 News. 9.15 News. 9.30 News. 9.45 News. 10.00 News. 10.15 News. 10.30 News. 10.45 News. 11.00 News. 11.15 News. 11.30 News. 11.45 News. 12.00 News.

RADIO 2

1.00 News. 1.15 News. 1.30 News. 1.45 News. 2.00 News. 2.15 News. 2.30 News. 2.45 News. 3.00 News. 3.15 News. 3.30 News. 3.45 News. 4.00 News. 4.15 News. 4.30 News. 4.45 News. 5.00 News. 5.15 News. 5.30 News. 5.45 News. 6.00 News. 6.15 News. 6.30 News. 6.45 News. 7.00 News. 7.15 News. 7.30 News. 7.45 News. 8.00 News. 8.15 News. 8.30 News. 8.45 News. 9.00 News. 9.15 News. 9.30 News. 9.45 News. 10.00 News. 10.15 News. 10.30 News. 10.45 News. 11.00 News. 11.15 News. 11.30 News. 11.45 News. 12.00 News.

RADIO 4

1.00 News. 1.15 News. 1.30 News. 1.45 News. 2.00 News. 2.15 News. 2.30 News. 2.45 News. 3.00 News. 3.15 News. 3.30 News. 3.45 News. 4.00 News. 4.15 News. 4.30 News. 4.45 News. 5.00 News. 5.15 News. 5.30 News. 5.45 News. 6.00 News. 6.15 News. 6.30 News. 6.45 News. 7.00 News. 7.15 News. 7.30 News. 7.45 News. 8.00 News. 8.15 News. 8.30 News. 8.45 News. 9.00 News. 9.15 News. 9.30 News. 9.45 News. 10.00 News. 10.15 News. 10.30 News. 10.45 News. 11.00 News. 11.15 News. 11.30 News. 11.45 News. 12.00 News.

RADIO 3

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RADIO 5

1.00 News. 1.15 News. 1.30 News. 1.45 News. 2.00 News. 2.15 News. 2.30 News. 2.45 News. 3.00 News. 3.15 News. 3.30 News. 3.45 News. 4.00 News. 4.15 News. 4.30 News. 4.45 News. 5.00 News. 5.15 News. 5.30 News. 5.45 News. 6.00 News. 6.15 News. 6.30 News. 6.45 News. 7.00 News. 7.15 News. 7.30 News. 7.45 News. 8.00 News. 8.15 News. 8.30 News. 8.45 News. 9.00 News. 9.15 News. 9.30 News. 9.45 News. 10.00 News. 10.15 News. 10.30 News. 10.45 News. 11.00 News. 11.15 News. 11.30 News. 11.45 News. 12.00 News.

RADIO 6

1.00 News. 1.15 News. 1.30 News. 1.45 News. 2.00 News. 2.15 News. 2.30 News. 2.45 News. 3.00 News. 3.15 News. 3.30 News. 3.45 News. 4.00 News. 4.15 News. 4.30 News. 4.45 News. 5.00 News. 5.15 News. 5.30 News. 5.45 News. 6.00 News. 6.15 News. 6.30 News. 6.45 News. 7.00 News. 7.15 News. 7.30 News. 7.45 News. 8.00 News. 8.15 News. 8.30 News. 8.45 News. 9.00 News. 9.15 News. 9.30 News. 9.45 News. 10.00 News. 10.15 News. 10.30 News. 10.45 News. 11.00 News. 11.15 News. 11.30 News. 11.45 News. 12.00 News.

Joy 10 1250

Milady's Silver Musick

There will be few more elaborate productions to the Jubilee celebrations than Milady's Silver Musick, a masque written and directed by Martin Duncan. The events of the reign of both the 17th and 18th centuries were celebrated with masques, visual spectacles which glorified the monarch and provided the opportunity for the artist to show his skills in a most odd way. At the Theatre Royal, Stratford, this is no exception. Martin Duncan has to have so absorbed himself in the form that his Silver Musick follows the original concept in all its mythological sequences.

There is no attempt at parody or contemporary comment—the nature of Calliope, the Muse of Poetry, as the wanders through seven scenes trying to help with a riddle which she solved, will bring back her mind, is played plain-straight.

The stock characters—spirits of the seasons, shepherds, mythological gods, the Devil himself and at the wonderful conclusion there is the appearance of the Worthies, such as St. George and Boniface. The lines that describe quality of half-learned nonsense which describes the masque, at least for modern readers trying to imagine the event from the pages of a book.

Anthony Thorncroft
Anita O'Day

Anita O'Day is dynamic, living out of the distance of that bird, the genuine jazz singer. Using her voice like a multi-line instrument—trumpet, soprano or trombone—she goes before and after the beat, sometimes on it, making use of intervals and spaces, bending, rising, clipping, gliding and using the words and music of quality lyrics and melodies in a totally unconventional way.

Conventional singing has never seen Miss O'Day's business: even she hit the jazz world with Gene Krupa band in 1941 when she started musicians and tuba alike with her instrument inspired, quirky phrasing. All these years—and a vacillating career—later she has developed, now perfected, her idiosyncratic style to a degree that is well-nigh unique.



Anna Cartier and George Murcell in the St. George's Theatre production of 'The Merchant of Venice'

Elizabeth Hall

Ligeti by DOMINIC GILL

Four years ago this month, the European Broadcasting Union relayed from Vienna an evening's homage to the Hungarian composer György Ligeti on the occasion of his 50th birthday, during the course of which a number of the major orchestral and chamber works were played. The following year, Lina Lalandi's English Bach Festival gave us another programme devoted to a selection of Ligeti's chamber-orchestral and chamber works. May must be Ligeti-month in London. On Sunday evening, the fifth London Music Digest offered an all-Ligeti programme of five chamber works—

most widely-known, is the Requiem of 1963-65 scored for 20-part chorus, whose first movement was used to memorable effect—though to Ligeti's chagrin and without his permission—by Kubrick in the soundtrack of his film 2001. But since the mid-1960s, after a brief flirtation with John Cage and Fluxus (the "anti-operas" *Avantures* and *Nouvelles aventures*, and the

of texture: a delicious confection of all sweetness, bubble and froth, but without firm centre or heart. Ligeti's new work for two pianos, *Monument*, *Selbstportrait*, *Begegnung*, was written last year, and gives its British premiere on Sunday. It is a serious piece—serious even in its moments of frivolity; it is cleverly written, and teems with interesting propositions, interesting ideas. Yet for all its admirable qualities, it is essentially another Ligeti lollipop: a piece of fine spun-sugar, attractive while it lasts, easy to forget.

The Entertainment Guide is on Page 33

But not easy to dismiss: while we wait for the main course, Ligeti's distractions are tempting. I liked the solemn octaves of *Monument*, and the patterns woven with them, increasingly more complex—"a tension," the composer told us, "between great emotion and deep-frozen nothingness." The *Selbstportrait* brought in the two Americans Terry Riley and Steve Reich to stand beside the composer—a merging of the techniques of Riley's pattern-repetition and Reich's phase-shifting, with Ligeti's own procedures of "grid-superimposition" and "canonic saturation." *Begegnung* presented a "liquefied" "dramatised" is as apt—version of the first movement, the octaves set now against a background of watery rushes and rills. A neat, amiable, assuredly heard at the time, *Clocks* and altogether some 17 minutes delivered by the Canino-Ballista duo with energy and style.

Parcell Room

Niños cantores de Navarra

by RONALD CRICHTON

Compared with recent years, Spanish music is thinly represented in the English Bach Festival: once again, the complete *Atalanta* has proved elusive. Nothing daunted, Miss Lalandi has ever found something new, unusual and worth bearing. The Niños cantores de Navarra are boys from the School of St. Ignatius at Pamplona founded by the director of the ensemble, Father José María Goicoechea. One of the five boys was heard at the 1976 Festival in Falia's *Puppet Show*. This time, his voice changed to alto and grown about a foot taller, he was unrecognisable, but two at least of his treble colleagues made the same well-remembered, pungent sound.

A group by the slightly later Valencian composer, Juan Bautista Comes, given with harp accompaniment, was by comparison dull, and the boys sounded as though they thought so too. But in compensation there were arrangements by composers of the time of Ferdinand and Isabella (including Encina and Escobar) of popular songs, among them the "Tres morillas" known to collectors from the precious recording of Lorca arrangements by Victoria de los Angeles, and a *pasodoble* which found its way into Warlock's *Suite Copriol*. In addition, various Basque and Catalan folksongs, some of them arranged by the ensemble's conductor.

The singing gave much and varied pleasure, not least because it was such a change from our native style, still smooth and well-behaved in spite of encouragement from Britten and composers after him to sing like real boys and not like the Victorian conception of angels. The Cantores do not bother much, if at all, about blend. Intonation varied from decent to wildly erratic, and seemed not to be greatly helped by such aids as pitch-pipes, or, in one group, from a harp not itself perfectly in tune. It was surprising how often this didn't matter, in that the most illuminating singing came in motets by

Kevin Henriques

St. John's, Smith Square

The Brahms Trio

by DAVID MURRAY

The Brahms Trio of Munich is a piano trio (that is to say, with violin and cello), and Brahms wrote only three of those. Do they really include one of them in every concert? In any case, their Sunday evening concert with his B major Trio op. 8, and made it immediately clear that their collective name was not lightly chosen.

Urgent and high-strung than usual, their rollicking mildness in it was of a piece with the whole reading. One expected the big Schubert B-flat Trio to be full-hearted and comfortably relaxed, and it was the *Allegro moderato*—with due note taken of the "moderato"—was richly sonorous but not declamatory; conversely, they remembered that the Andante is "un poco mosso" and refused to let it swoon indecently. Again their Scherzo twinkled rather than glittered, and perhaps the lengthy Rondo wanted more injection of energy. Their finesse in the work was noteworthy, though. Such unstinted romantic generosity is not often heard in this repertoire, more clinical—but not more civilised—readings being in fashion these days; it would be good to hear much more of the Brahms Trio.

Though their pianist Kirsti Hjort doesn't lack strength, she has the light, unaggressive touch traditionally expected of pianists of her sex. Since Conrad von der Goltz and Jan Polasek—excellently matched—supply string tone that is romantically full and rounded, the usual problems of balance in this medium are solved in advance. The early Brahms work however much revised later) assigns long stretches of busy accompaniment to the piano, which here for once didn't need to sound anxiously restrained while the cello rose expansively. Their ensemble is faultless, bearing the marks of a long and comprehensively sympathetic collaboration. The lyrical warmth and insight of the Brahms was quite remarkable; if the Scherzo was less

The Yale Glee Club of Yale University, New Haven, Connecticut, U.S., will give a concert in the Concert Hall of the Royal College of Music on Saturday, May 21. The Club has generously offered to donate the proceeds of the concert, whose programme consists of classical, modern, religious and folk music to the International Capital Fund Appeal recently launched by the RCM on behalf of the Junior Department.

Art exhibitions and books

From Claude to Churchill

by DENYS SUTTON, Editor of Apollo

Agnew's is exhibiting a group show of paintings by Jan van Goyen, many of which come from the collection of Thomas Coke, first Earl of Leicester. He became interested in art on his Grand Tour, writing home from Rome in 1704 that he had turned into "a perfect virtuoso, and a great lover of pictures." Rome offered him ample opportunity to familiarise himself not only with her ancient monuments, but with modern art. He had a useful guide in William Kent and visited the studios of a number of artists, meeting Solimena, Benedetto Luti, Coma, Trevisani and others. It was as if a mirror of the 1820s did the rounds of the Paris studios and got to know Picasso and Derain, Matisse and Van Dongen.

Some of the drawings were bought by Lord Leicester; others were acquired on his behalf by Gavin Hamilton, painter, archaeologist and dealer. The selection at Agnew's is interesting and attractive; it includes a sheet by Veronese which, however, does not suggest the sumptuousness of this artist's colour, and a charming drawing of St. George and the Dragon by Salviati.

Pride of place is held by the Claude which so romantically evoked an Italy in which realism and fantasy are blended. Claude's technique never ceases to yield pleasure; his was the gift of being able to suggest the essence of a scene and to give his work a lyrical quality.

The exhibition provides an instructive panorama of Italian Baroque draughtsmanship. The artists who captured the Earl's attention, or who were bought by Hamilton, belong to the generation which had died 30 or 40 years earlier, men such as Guercino, Domenichino and Pietro da Cortona. Their drawings are usually lucid and charming, and have the sort of appeal associated with bel canto. A different note is struck by Salvator Rosa, a master who attracted such attention in the early Romantic era. One of the most striking works on view is his drawing of a hermit, the very symbol of human loneliness, thereby suggesting how much Boucher, in his sketches, owed to the Dutch 17th-century artist. How well Van Goyen can conjure up the life of the times as in the exquisite *View near Dordrecht*, from the Fitzwilliam Museum, Cambridge! This show, which emphasises the debt Turner owed to his predecessor, has prompted the publication of a monograph with interesting accounts of the taste for Van Goyen in Britain and of the development of his art.

The Dutch painting of the Golden Age is apt to be rather taken for granted. Exceptional interest is aroused, therefore, by Baruch D. Kirschbaum's *The Religious and Historical Paintings of Jan Steen*, just published by the Jan Jacobs Gallery (Molcomb



A winter scene by Van Goyen

the Hon. Robin Neville, in which the trees and buildings on the right are handled with attractive freedom. Van Goyen was an artist who loved browns and greens and could ring the changes on a relatively restricted palette. He used monochrome with particular distinction, thereby suggesting how much Boucher, in his sketches, owed to the Dutch 17th-century artist. How well Van Goyen can conjure up the life of the times as in the exquisite *View near Dordrecht*, from the Fitzwilliam Museum, Cambridge! This show, which emphasises the debt Turner owed to his predecessor, has prompted the publication of a monograph with interesting accounts of the taste for Van Goyen in Britain and of the development of his art.

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about that early period and of Ethel Sands' relations with Sargent. Like Ethel Sands, Sir Winston Churchill was an admirer of Sargent. Churchill did not follow his matter in his own work, but was more in the tradition of Sargent. One of the works in the Silver Jubilee show of Sir Winston's work at Knole is after a painting by this artist. Churchill took up painting as a pastime and, though it would be exaggerated to stake too great a claim for his artistic achievement, a strong personality marks his painting. *Sunset over the Sea*, painted in about 1925, could well hang alongside a Nolde. His *Self-Portrait*, of about 1920, is interestingly introspective. The exhibition may be enjoyed in its own right and as a salute to this grand Englishman, whose memory rests evergreen in the hearts of many of his compatriots; to be a painter and a patriot is an excellent combination, worth recalling at a time of national decision!

HOW IRVINE NEW TOWN GAVE ONE COMPANY A MAGIC CARPET RIDE.



The Irvine Development Corporation has something of a reputation for looking after the Goliaths of the company world. Like Beecham, Hyster, SKF and Volvo. What's not so well known perhaps is the great care we take of what might be called the Tom Thumbs of the company world. Like Craigie Carpets. Founded six years ago by Fred Duckworth and his wife Pat, Craigie Carpets caters for a highly specialist market, producing top quality, handtufted, pure new wool carpets, rugs and wallhangings to customers' orders and special requirements, and often to their own individual designs.

In 1974 Craigie Carpets' ten full time staff moved into an Irvine New Town double unit advance factory of 4,200 square feet. And the Company really started going places. Exporting to the U.S.A., Jamaica, Africa, Europe and even to that carpet makers' Mecca, the Middle East. Craigie Carpets found Irvine to be well situated for both national and international communications by road, rail, sea and air, but were originally attracted to the town by the ready availability of advance factory space, either for sale or lease. By the generous grants, loans and development

incentives. And by the support, encouragement and assistance of the Corporation's professional staff. As Craigie Carpets soon discovered, Irvine New Town really lays out the red carpet for new companies. Whether the company is a Goliath or a Tom Thumb. For further information on Irvine please contact Michael S. Thomson, Commercial Director. Irvine Development Corporation, Perceton House, Irvine. Ayrshire KA11 2AL. Tel: Irvine 74100 Telex: 778984 or London Office, The Scottish New Towns, 19 Cockspur Street, London SW1V 5BL. Tel: 01-930 2531 Telex: 25408.

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EUROPEAN NEWS

Tindemans seeks a four-party coalition

By David Buchan

BRUSSELS, May 9. MR. LEO TINDEMANS, Belgium's caretaker Prime Minister, today opened four-party talks on forming a coalition with an agreed programme of regional reform.

If the Volksunie and the FDP—the two most vociferous parties on either side of Belgium's linguistic rift—agree to a plan of regional reform, then Mr. Tindemans is certain of selling it to Parliament and the country.

Belgian coalition broking is traditionally abandoned as choosing a new pope, and it may be the end of the month before a new Government emerges.

Cabin staff strike at SAS

By William Duffell

STOCKHOLM, May 9. ABOUT two-thirds of Scandinavian Airlines System's more than 2,000 cabin staff went on strike from 1 a.m. today after their Commercial Officials Union had rejected the 9.5 per cent salary increase proposed by the official arbitrator.

SAS said this afternoon that it had cancelled all its inter-continental traffic except for the North American route, on which aircraft were flying normally.

The top SAS management this afternoon discussed the possibility of declaring a lock-out against the Commercial Officials Union. This would require a week's notice after which all SAS traffic would come to a standstill.

Over 6,000 stand in Spain poll

BY ROGER MATTHEWS

MORE THAN 6,000 candidates plan to run in the Spanish general elections on June 15. When the deadline expired last night for the presentation of candidates, all the principal electoral alliances had completed their lists for the 330 seats in the Congress (Lower House), and 207 for the Senate.

During the next 10 days, the electoral authorities will be scrutinising the lists to ensure they conform with the pertinent legislation. This is the last major hurdle to be overcome before the official three-week campaign gets underway on May 24, although in effect this runs up to the elections as already in full swing.

In Madrid, where most of the main political leaders will be standing, there are 538 candidates for the 32 Congress seats, and 40 for the four places in the Senate.

BY REGINALD DALE, EUROPEAN EDITOR, RECENTLY IN SPAIN

Spanish industry gets cold feet on EEC membership

ON PAPER it all looks easy. Next month the Spanish people hold their first free elections in 15 years.

Businessmen are already preparing to welcome their Spanish colleagues into the fold. A survey conducted for the Spanish Chambers of Commerce in seven European countries last month showed 89 per cent of leading bankers and industrialists to be in favour of Spain coming in.

But while the Spanish Chambers of Commerce diligently polled industrialists in other countries, they neglected to ask themselves the same question. In fact, the evidence seems to show that the nearer the moment of the actual application comes, the greater the nervousness that is being shown by Spanish industry at the prospect of full membership.

Such considerations have sharply concentrated the minds of industry and Government alike on the likely time-table for tariff-cutting if the entry bid goes ahead. If the Spanish application followed the precedent of Britain, Ireland and Denmark, and the path Greece is aiming at, there would be roughly two years for negotiations and one year for ratification before full membership, marking the start of a five-year transitional period.

Spain's case, this would mean setting aside 1978 and 1979 for negotiations and 1980 for ratification. Full membership would come at the beginning of 1981.

The reasons for the change in mood are part economic, part psychological. Economically, there is a steadily growing appreciation that the dismantling of Spain's highly protective tariff wall would create major difficulties for wide sectors of industry, some of which are already being severely affected by inflation. Some of the largest industries are confident they can meet the challenge.

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Senate by simple majority. Electoral votes vary considerably in numbers, with 40,000 voters per Congressman in some provinces compared with 141,000 in the capital.

Meanwhile, it was being cast to-night, that Don Juan Carlos and head of the Spanish royal household, would have week-end make the formal act of renouncing an claim to the throne. Juan Carlos was chosen by General Franco to come head of State, instead of Don Juan, whom the former had later considered to be a gerously liberal.

Spain's agricultural exports to the anti-dumping procedures have been taken out again. Spanish industrial exports to EEC countries. But the more de-seated complaint is that after years of which the Communist said Spain could not join because of the threat to its farmers posed by Spanish agricultural products.

Such hesitation is not, by a large, shared by the agricultural community, which has long seen major benefits in EEC membership—the precise prospect of the French and Italian Governments—and more than willing to settle for a five-year transitional period. While Spanish farmers can hope to boost their sales of fresh and dried fruit, citrus, olive oil, wine and cereals to the EEC market, the picture is not too brightly.

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50 Avenue Foch. Habiter Avenue Foch, à Paris? Autant habiter le bon côté. Côté droit, quand on descend Côté soleil. Côté gauche, toutes les grandes avenues du monde ont un bon côté. Avenue Foch, depuis un siècle, les plus recherchés sont les numéros pairs. Le cinquantaine, au numéro cinquante, s'édifie un ensemble nouveau et très fidèle à l'Avenue Foch. Avec des appartements de 3, 4, 5 pièces dans les superstructures. Et avec des hôtels particuliers de 4, 6, 8 pièces dans la partie basse où se mêlent patios, verdure, jardins suspendus: au total, 4000 m² de verdure sur les 5600. Appartements et hôtels particuliers. L'architecture et le décorateur ont voulu un style "pierre et ton bronze" qui respecte la tradition de l'Avenue du Bois, mais qui n'a rien de rigide, grâce à une conception très libre des espaces. Les pièces sont conçues pour recevoir, mais dans un esprit d'intimité et de chaleur tout à fait dans le goût actuel. Le calendrier des travaux est conçu pour que, dès maintenant, vous puissiez vous décider sur les aménagements intérieurs que vous souhaitez - dans le cas où vous en souhaitez d'autres que ceux prévus par l'architecte et le décorateur. Marketing company: SFCI (anc. Bernheim F et F) 23, rue de l'Arcade, 75008 Paris, Tél. 265.41.21. Société de commercialisation: SFCI (anc. Bernheim F et F) 23, rue de l'Arcade, 75008 Paris, Tél. 265.41.21. Viewing every day from 11 a.m. to 5 p.m., except Sunday and public holidays. Saturdays from 10 a.m. to 5 p.m. In the reception and sales areas: models, drawings and "log book" published specially for you.



TUBACEX ANNUAL GENERAL MEETING. Steady progress in 1976. Net profit of Ptas. 228 million. Gross dividend of 10.58%. Forthcoming programme of government investment facilities. Net profit Ptas. 228.7 million. Return on Capital 12.03%. Residual Cash Flow 21.56%. Retained profit 32.20%. Earnings per share Ptas. 78.88. Net Dividend 8.83%. Capital at 31/12/76 Ptas. 1.515.3 million. President's statement: The Annual General Meeting of TUBACEX took place on April 25th. It was attended by a large number of shareholders and presided over by Mr. Enrique Llopis Guiloche. The report and accounts for the year 1976 were examined. There was a sustained development of business activity. Production of hot steel has been maintained at practically the same level as during the previous year, while the production of cold steel has increased by 14%. Sales, at Ptas. 3,210 million if the subsidiaries are fully consolidated, were almost the same as for 1975. On the industrial side it is worth pointing out that a plant producing cold steel drawn tubes, which is the only one of its kind in Spain, has come on stream. In terms of the overall business, the importance of exports must be stressed, as they represent about 40% of total sales and penetrate the EEC, Scandinavia, the East and the USA. This determined export policy, reinforced by a dynamic foreign trade organisation, will be maintained during 1977 and the years that follow. The net profit, at Ptas. 228.7 million, was 24% lower than in 1975. The depreciation charge of Ptas. 181.2 million was 20% up on the previous year and therefore net cash flow rose to Ptas. 410 million. The Board has decided to pay a net dividend of 8.83%. Increase in capital: The Board considers that the company should maintain its dynamic progress in a growing market by adhering to its current plans. It therefore proposes to make use of the provision envisaged in article 96 of the current law relating to limited liability companies so as to increase the authorised capital to the level permitted. This action will only be taken when the time is considered right, bearing in mind the general level of the stock market and the shareholders' convenience. Likewise it is proposed that the Board be authorised to issue bonds, mortgage bonds or convertible bonds up to a value of Ptas. 1,500 million for stated objectives. New investments: As a result of concerted action, two new plants, the hot rolled tube plant and the new steel and rolling mills will come on stream during 1977. Expenditure on these investments, which are already largely paid for, has reached Ptas. 3,400 million. Despite the adverse economic situation, in both national and international terms, these installations, which presage a process of vertical integration and product diversification, should start to bear fruit at the beginning of the next fiscal year.

Sotheby's Italian 'sale of century' halted

BY PAUL BETES

ITALIAN AUTHORITIES cancelled Sotheby's Italian "sale of the century" only hours before it was due to start in Florence tonight.

In the last 48 hours, the sale, which involves the entire contents of the palazzo of one of Florence's oldest patrician families—Serristoris—and which was to have lasted for six days, has become the centre of a row between the auctioneers and the family on the one hand and the Italian fine arts authorities on the other.

Yesterday afternoon, the authorities indicated their intention to block the sale on the grounds that the collection represented part of the country's cultural heritage.

The decision to cancel the sale is believed to be the first of its kind in Italian history. It came only a few hours before the sale was scheduled to open at 9 p.m. to-night.

The sale, which was perhaps the highlight of Florence's annual cultural festival, the so-called "Maggio Fiorentino", was drawn large numbers of dealers, collectors and onlookers to this Renaissance city. The palazzo yesterday was the scene of a massive crush of pre-sale viewers, and more than 1,000 people were expected to attend the sale.

As a precaution, efforts will be made to reduce consumption of the product as much as possible. Labels on foodstuffs and drinks for diabetics will have to show the saccharine content, and warnings on the labels of saccharine pills and drops are being considered.

Dutch to limit saccharine

BY MICHAEL VAN OS

AMSTERDAM, May 9. THE USE of the artificial sweetener saccharine in Dutch foodstuffs and drinks will be banned, Mr. Jo Hendriks, the State Secretary at the Health Ministry, announced in The Hague.

Saccharine pills and drops for weight-watchers will not be affected, nor will special products for diabetics, though its use here will be limited as much as possible.

The State Secretary, answering a Parliamentary question, said scientific investigations have shown that the use of saccharine can cause cancer, but on the basis of available reports, the health risks for those using normal quantities appears "negligible."

Among the 988 lots were a madonna by Lorenzetti, drawings by Correggio, and the highlight of the collection, an altar-piece by Mantegna di Nardo. Other lots included a number of paintings ranging from furniture, china, L15m, a vase, silver and toys.

According to Sotheby's, the sale was expected to fetch more than £500,000.

This was the second such sale organised by the Street auctioneers in Italy. The last was in 1968, when the Nicholas Demidoff collection was sold at the Pratolino in Florence, fetching a total of £466,000. Following the recent death of Countess Sophia Serristoris, her heirs decided to sell the contents of the palazzo to meet the duties of some £900m. (about £800,000), as well as other debts. Maintenance of the palazzo was understood to average £1m a year.

Tunisia seizes fish boats

BY OUR OWN CORRESPONDENT

ROME, May 9. A Tunisian reaction to a row involving the Italian hydrocarbon concerns, which is exploring for oil in the continental shelf off the Tunisian-Libyan border.

Tunisia and Libya are putting their territorial row over the shelf which is understood to contain rich deposits of oil.

According to Italian officials, three Tunisian patrol boats fired machine-gun shots at the four Italian ships and then forced them to sail to the Tunisian mainland.

The Italian Government today angrily protested against the incident. This latest incident, however, is widely regarded here as a more subtle feeding an ill-

defined resentment that the Community is in some way being "too far" to Spain. There is, in fact, a deep sense of grievance at French interference in Spanish agricultural exports to the anti-dumping procedures have been taken out again. Spanish industrial exports to EEC countries. But the more de-seated complaint is that after years of which the Communist said Spain could not join because of the threat to its farmers posed by Spanish agricultural products.

Such hesitation is not, by a large, shared by the agricultural community, which has long seen major benefits in EEC membership—the precise prospect of the French and Italian Governments—and more than willing to settle for a five-year transitional period. While Spanish farmers can hope to boost their sales of fresh and dried fruit, citrus, olive oil, wine and cereals to the EEC market, the picture is not too brightly.

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Joy's 1350

EUROPEAN NEWS

EEC gives Ireland ultimatum on fish ban

By Robin Reeves BRUSSELS, May 9. THE EUROPEAN Commission has given the Irish Government until tomorrow to lift its unilateral ban on all fishing vessels of 90 feet or more from fishing waters up to 50 to 100 miles from the Irish coast. If the Irish Government, as expected, fails to comply, it is assumed that the Commission's executive will decide at a weekly meeting on Wednesday to refer the matter to the European Court of Justice in Luxembourg. The Commission argues in its "reasoned opinion" that the ban is discrimination in practice if it is not based on the Irish fishing fleet's composition almost exclusively of small vessels. It was not impressed by the Irish Government's justification that the conservation of fish stocks by restrictions on boat size was one of the considerations recommended by the N.E. Atlantic Commission, saying this is meant to apply only to certain small areas where stocks are particularly vulnerable. Hanging on the outcome of the case is not only the fate of the ten Dutch trawlers arrested last week for contravening Ireland's unilateral ban but also perhaps the future shape of the EEC's common fisheries policy regime. Including Britain and Ireland's demand for exclusive national waters up to 50 miles offshore.

Europe export bank plan to be reviewed By Philip Rawstone STRASBOURG, May 9. THE EEC Commission is to re-examine its proposals for the establishment of a European export bank. Mr. Christoforou, Treasurer and Commissioner responsible for financial institutions, told the European Parliament today that the results of the review would be presented by the end of the year. The move followed criticism from MPs about the lack of information on the cost of the project to the Community budget. Mr. Kaz, Nyberg, for the Parliament's committee on an external economic relations, complained that MPs were being asked to "sign a blank cheque." There were no estimates of the likely volume of the bank's business. There was general support for the principle of a new bank that would improve the Community's competitive position with the U.S. and Japan, by providing export credit and insurance facilities. However, MPs demanded more information about the criteria that would be used for the selection of projects. Mr. Tugendhat said the Commission would review its proposals as quickly as possible. It remained firmly committed to the harmonisation of national export credit facilities. The nation of a European export bank should help this process as well as the competitiveness of Europe's exporters.

U.S. scientist warns of A-bomb pre-detonation

BY DAVID FISLOCK, SCIENCE EDITOR A NUCLEAR weapon made from plutonium extracted from spent nuclear fuel would tend to pre-detonate before it was fully assembled, a leading U.S. nuclear scientist told the nuclear conference in Salzburg yesterday. This was because of its high concentration of the plutonium-240 isotope, said Dr. Hans Bethe, opening a session on nuclear power and public opinion at the International Atomic Energy Agency's conference. Ideally, a weapon that wanted to explode would use highly enriched uranium as the explosive, because it was far easier than using plutonium, said Dr. Bethe. "Second choice would be weapons-grade plutonium extracted from spent fuel which had remained only briefly in the reactor. President Carter's proposals for anti-nuclear proliferation at the London summit last week end—the "most difficult and divisive" subject of the conference, he admitted yesterday—focus on plutonium, in spent nuclear fuel, but take a more relaxed view of enriched uranium. But Dr. Bethe acknowledged that the "primary safeguard against the building of bombs remained the unavailability of plutonium," even though making such weapons was not so easy as many seemed to believe.

Uranium ship 'confession'

OSLO, May 9. AN ISRAELI agent told Norwegian officials four years ago he was involved in selling a West German freighter from which 200 tons of uranium—enough for 30 nuclear bombs—was hijacked to Israel, the former chief prosecutor said today. The statement by Mr. Haakon Wiker was one of the most sensational in the mystery over the 1968 disappearance of the uranium from a West German ship bound from Antwerp to Genoa. The ship vanished, reappearing under a new name about a year later. Sources in Brussels, headquarters of the EEC, said they thought that it got to Israel. It was of a type which could be used in making atomic bombs. Mr. Wiker said today that an Israeli agent, Mr. Dan Aerbel, volunteered to Norwegian police interrogators in 1973 that he took part in an operation to divert the ship with the uranium aboard. Mr. Wiker said he thought that Mr. Aerbel volunteered the information in his efforts to prove that he was an Israeli agent, after he had been held in connection with the killing of a man suspected of being an Arab terrorist. Mr. Aerbel was sentenced to five years in jail for the murder of an Arab waiter, Mr. Ahmed Bouchikha, who was working at a hotel in the Norwegian town of Lillehammer, but was pardoned for psychiatric reasons and left for Israel after 12 months. The Tel Aviv newspaper Maariv today quoted Mr. Aerbel as denying having had anything to do with the missing uranium. Reuter

Celtic Sea oil hunt to reopen

PARIS, May 9. THE Elf-Aquitaine petroleum company said today it intends to restart its offshore exploration activities in the Celtic Sea next year. It will carry out a series of seismic tests as soon as the dispute between France and Britain over their respective claims to areas in the region is settled by the International Court of Justice in Geneva. A judgment is expected in June. AP-DJ

Newspaper staff plea to Danish Premier

COPENHAGEN, May 9. JOURNALISTS and other members of the staff of the Copenhagen newspaper Berlingske Tidende today formed a committee for the survival of the newspaper and appealed to the Prime Minister to appoint an arbitrator to solve the dispute between the publishing house and about 1,000 printers which has prevented the newspaper's publication since January 30. Romanian releases Almost 19,000 prisoners are to be released from jails in Romania under a general amnesty to mark the country's 100th anniversary of independence, and nearly 9,500 accused will not be brought to trial, Reuter reports from Vienna.

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Commemorate someone dear to you now £150 inscribes a name on the Dedication Plaque of a Day Centre in memory of a loved one. Your family name or your own name can also be commemorated. May we send details to you or your advisers. Please write to: The Hon. Treasurer, the Rt. Hon. Lord Maybray-King, Help the Aged, Room PT9L, 32 Dover Street, London W1A 2AP. * £100 names a hospital bed overseas.

Bonn may introduce job creation programme

WEST GERMANY, reacting to last week's disappointing unemployment figures, is actively considering fresh steps to tackle the "hard-core," structural aspects of the problem, which may include a limited job creation programme. The Minister of Labour, Herr Herbert Ehrenberg, and the head of the Autonomous Federal Labour Office, Herr Josef Stügel, were reported to be discussing the possibilities for a new initiative today, although it may be some weeks before any proposals are ready for decision by the Cabinet. The Government's growing concern, which closely reflects the stress placed on unemployment at last week-end's London summit conference, follows confirmation that the number of people out of work in April remained well over 1m. This bitterly disappointing result makes it virtually certain that the official hope for an average unemployment level in 1977 of 850,000 cannot be fulfilled. It also makes certain a further

increase in the pressure already being exerted on Chancellor Helmut Schmidt's Social Democratic-Free Democratic coalition by the trade unions, who have long been unsatisfied by Bonn's labour market policies. For some months now, union leaders have been calling for more work-sharing as well as for direct job-creation, though to little effect. Last November, the Government put into effect a DM430m programme to improve labour mobility and ease the conditions for job training and re-training. About a quarter of this sum has been drawn upon so far, without making a major impact on the overall statistics. The latest deliberations in Bonn coincide with yet another gloomy report on the expectations of the private sector. According to a survey of 9,000 companies by the Deutsche Industrie- und Handelskammern (DIHK), industry expects an increase of only 1.2 per cent, or about 90,000, in the number of jobs between now and the end of the decade.

This would be only about one-tenth of the number of jobs estimated to have disappeared since 1973. The DIHK survey reinforces the view of the Federal Labour Office that the principal structural problem for West Germany is still one of qualifications. There are, in particular, problems due to an insufficiency of training courses for the young people wanting them, and with middle-aged office workers not easily adaptable to new lines of employment. Meanwhile, new industrial orders and production figures for March, published today, illustrate the continuing uncertainty about the strength and durability of the West German economic recovery. New orders increased overall by 1.5 per cent in March, with domestic orders down by 0.5 per cent, and export orders up by a sharp 7 per cent. In both categories, the key capital goods sector appeared to be doing better than average, with a 1.5 per cent decline in domestic new orders counterbalanced by a 9 per cent rise in those from abroad. Yet on a comparison between December/January and February/March, there was a drop of 4 per cent. Similarly, industrial production between the two months December/January and February/March showed a drop of 1.5 per cent, with a less pronounced 1 per cent fall from February to March. For the time being, both indicators will have to be treated with caution, in the view of both official and independent economists, since the Statistical Office still appears to be having problems with the adjustment process it carried out in January. Figures for all the first three months of this year are still being described as provisional, and it is not yet clear when the "bugs" in the new basis of calculation will be removed.

Price rises slow slightly in March says OECD

PARIS, May 9. INFLATION in Portugal, Spain, and Italy is still running at rates equivalent to more than 20 per cent a year, and in Britain and Ireland at 16.7 per cent a year, the Organisation for Economic Co-operation and Development said today. The rate was highest in Iceland, at 24.5 per cent, followed by Portugal at 24.1 per cent, according to the OECD figures. The figures, based on the latest available information, showed that inflation in the major Western countries eased slightly in March, but was still running at the equivalent of more than 9 per cent a year. The OECD said the rate of consumer price rises in March slowed to 0.3 per cent, compared with one per cent in February. Switzerland, where prices went down by 0.2 per cent in March, had the lowest annual inflation rate of 1.0 per cent, the OECD said. The full OECD figures for March increases in consumer prices and annual inflation rate were: Canada 1.0 and 7.4; United States 0.6 and 6.4; Japan 0.6 and 9.4; France 0.9 and 9.1; West Germany 0.3 and 9.9; Italy not available and 21.9 to latest available; Britain 1.0 and 16.7; Austria 0.2 and 5.8; Belgium -0.1 and 7.4; Denmark 1.1 and 8.6; Finland 1.6 and 12.1; Greece 2.7 and 10.3; Iceland 1.9 and 24.5; Ireland 1.3 and 16.7; Luxembourg 0.4 and 8.3; Holland 0.5 and 7.3; Norway 1.6 and 9.1; Portugal not available and 24.1 to latest available; Spain not available and 21.9 to latest available; Sweden 0.9 and 9.2; Switzerland -0.2 and 1.0; Turkey not available and 15.3 to latest available; Australia 8.0 (first quarter) and 13.6 to latest available; New Zealand 0.9 (first quarter) and 13.7 to latest available. Reuter

Friction between Giscard and Gaullists continues

SHARP DISAGREEMENTS between French President Valéry Giscard d'Estaing and the Gaullists were again underlined in speeches and interviews over the week-end, only 48 hours after what was billed as a "peace-making" lunch between M. Raymond Barre, the Prime Minister, and M. Jacques Chirac, the Gaullist leader. Although the meeting between M. Barre and M. Chirac was described by both sides as "cordial," it appears to have solved few of the fundamental arguments over the strategy of the ruling coalition during the approach to the general election next spring. It may even be doubted whether, after the latest exchanges, M. Chirac's proposal for a pact, defining a code of conduct for the coalition partners in relations with each other, will see the light of day. While M. Chirac has been touring the country and representing himself as the leader of the political combat against the Socialist-Communist opposition, M. Giscard has given an interview to the weekly news magazine L'Express, in which he not only accuses the Gaullists of having organised a campaign against him last year, but makes it clear that he intends to remain master in his own house. In particular, the President has emphasised that he considers M. Barre, and not M. Chirac, to be the leader of the electoral campaign against the Left, and that he will not take lying down Gaullist opposition to essential Government legislation. The president reveals in the interview that he would have dissolved the National Assembly after the bitter parliamentary row between M. Barre and the Gaullists at the end of last month, if the latter had failed to support the Government in the vote of confidence on the Prime Minister's latest economic package. In the event, the Gaullists supported Mr. Barre's programme, but only after spec-

ifying that this should not be taken as a general vote of confidence in the Government. What is more, M. Giscard leaves no doubt in anybody's mind that he would be prepared to initiate a similar constitutional procedure leading to an early general election, if the Gaullists oppose legislation on which the Government has staked its reputation, such as the forthcoming text intended to ratify direct elections to the European Parliament. M. Chirac, meanwhile, has underlined several contradictions in M. Giscard's statements over the past few weeks, and is behaving increasingly as if the Gaullists were now the only coalition partners.

barrier to a victory of the Left at the next election. The Gaullist leader pointed out in a radio interview, that the President himself emphasised that the government's task was to run the country, and that it was up to the political parties to organise the election campaign. The President was also the author of the concept of "pluralism" within the coalition which allowed each party to pursue its own particular policies. M. Chirac said he would therefore continue to underline the "originality and independence" of his party, while doing nothing which could undermine the independence of the other coalition partners.

Security clamp-down in Turkish poll campaign

THE TURKISH authorities have taken strict security precautions to prevent the recurrence of last month's violent attacks on Mr. Bulent Ecevit, the main Opposition leader, and his followers which have aroused concern about the campaigning for the June 5 general election. Mr. Ecevit's rallies in the Aegean and Mediterranean regions last week-end, although attended by hundreds of thousands of people, were peaceful. He told the Financial Times that he was satisfied with the security arrangements and hoped they would continue to be effective. The 51-year-old Social Democrat, who leads Turkey's biggest political party, blamed "certain organisations" within the Turkish national intelligence organisations (MIT) for instigating the police violence and placed the blame for the duration of Mr. Ecevit's visit.

in Istanbul in which 34 people were killed. He charged Mr. Süleyman Demirel, the Prime Minister, and one of his three Deputy Prime Ministers, Mr. Alparslan Türkeş, of the neo-Fascist Nationalist Action Party (NAP), of wanting to "use" those certain organisations instead of taking measures against them. Police and troops were very much in evidence in the towns and cities which Mr. Ecevit visited. His election bus travelled between lorry loads of troops and policemen. Soldiers carrying their rifles at the ready cordoned off the squares when the rallies were held and people were admitted after a search for arms. I saw policemen on rooftops, balconies and minarets in some towns even cafes, restaurants and other public places were shut for the duration of Mr. Ecevit's visit.

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'honoured guest'. And you'll discover we're true to our word when you fly JAL. When you refresh yourself with hot ashitori towels, sip a little green tea or splash out with champagne. When you sample exquisite Japanese delicacies or feast on fine European cuisine. And when you sit back, close your eyes and find that a pillow has magically appeared.

Find out more by contacting the Executive Service Secretary at your nearest JAL office or mail this coupon today. To: Japan Air Lines, 8 Hanover Street, London W1R 0DR.

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AMERICAN NEWS

WORLD TRADE NEWS

Report urges pipeline delay

OTTAWA, May 9. A TEN-YEAR moratorium on construction of a natural gas pipeline along the Mackenzie Valley has been recommended by Justice Thomas Berger in his report to the Canadian Government...

BP Alaska sales start

BRITISH PETROLEUM and its U.S. associate Sohio, are concluding the initial sales deal for their Alaskan crude which is due to come on stream in July...

Canada prime rate The Royal Bank of Canada has said that unless interest rate structures change it intends to reduce its prime lending rate on June 1 by half a percentage point to 8.1 per cent...

Carter plans tax aid for social security system

BY JUREK MARTIN, U.S. EDITOR

WASHINGTON, May 9.

THE CARTER Administration today proposed the diversion of general tax revenues and higher levies on employers to stave off the growing threat to the social security system...

social security taxes that are lost burden on the corporate sector, Mr. Callano said that the conventional solution of higher contributors' rates would cost employers over \$34bn. in the five year period...

It would also remove, over a period of years, the ceiling on the amount of an individual's wage on which his employer pays social security taxes...

Coal employers lose strike suit

BY STEWART FLEMING

NEW YORK, May 9.

A U.S. federal judge has rejected the coal industry's long-standing attempt to get an order to curb wildcat strikes...

The industry is predicting a rash of strikes to accompany the new contract negotiations...

One of the main problems is that employers have frequently soured the industrial relations atmosphere either by resisting unionisation, sometimes with force, or by going quickly to arbitration instead of negotiating...

U.S. and Panama resume talks on future of Canal

WASHINGTON, May 9.

THE U.S. and Panama resumed negotiations today on the future of the Panama Canal, following warnings at the week-end that Panama may use "non-peaceful means" unless given control of the canal soon...

Brazil arrests criticised

By Sue Branford

THE ARCHBISHOP of Sao Paulo, Dom Paulo Evaristo Arns, attacked the Brazilian authorities last night for the way they are treating recently arrested workers...

John Deere in Venezuela tractor plant

By Joseph Mann

CARACAS, May 9.

JOHN DEERE, the Venezuelan Government and a group of private investors will begin construction next month of the country's first plant for producing farm tractors and diesel engines...

The three groups have established a company called Panatrace with initial capital of \$50 million...

Nigeria may split ships deal

THE NIGERIAN Government may be considering a three-way split of its \$200m order for 19 cargo liners...

U.K. success in Poland

WARSAW, May 9.

BRITAIN WAS Poland's second biggest non-Communist trading partner in the first quarter of this year, rising from fourth position in 1976...

Cementation £24m. contract

Cementation International Ltd. has signed a million contract with the Polish foreign trade enterprise INTRACO for the design, construction and commissioning of two hotels at Gdynia...

Smurfit gives SCA assured outlet

BY MAX WILKINSON

THE RECENTLY announced paper and board and manufacturer in the U.K. is being used at the rate of about 300,000 tonnes a year and is increasingly being substituted for imported kraft...

Japan will take time to import U.K. motor parts

BY CHARLES SMITH, FAR EAST EDITOR

TOKYO, May 9.

THE BRITISH auto parts industry should be able to sell in Japan on a large scale, but it may take two years for current promotional efforts to be translated into buying orders...

This comment was made today by Mr. Toshio Nakamura, managing director of the Japan Automobile Manufacturers' Association...

Steel anti-dumping probe

FINANCIAL TIMES REPORTER

THE DEPARTMENT OF Trade is to conduct an anti-dumping investigation into imports of certain tool steel bars from Sweden...

Meriden Austrian moped deal

BY PETER CARTWRIGHT, MIDLANDS STAFF

THE MERIDEN MOTORCYCLE CO-OPERATIVE, near Coventry, is building prototypes 50 cc mopeds for eventual high-volume production in association with the Austrian two-wheel manufacturers...

Australian export record

BY KENNETH RANDALL

AUSTRALIAN EXPORTS reached a record monthly level of \$A1,065bn. (\$643m.) in April according to the preliminary figures released today by the Bureau of Statistics...

GEC joins Libyans in Malta

BY GODFREY GRIMA

GEC SWITCHGEAR is to set up a factory in Malta for the production of transformers and electrical switchgear jointly with the Maltese Public Electric Works...

NEWS ANALYSIS—KRAFT LINER

Smurfit gives SCA assured outlet

market and seven million tonnes a year and is increasingly being substituted for imported kraft. Against this background all importers have been anxious to secure their outlets, particularly in the U.K. is one of the largest importers in Europe...

MEDICAL CARE IN THE U.S.

Doctoring the system

BY STEWART FLEMING IN NEW YORK

JOHN McVEETY is the 32-year-old head administrator of a 104-bed hospital in Worthington, Minnesota, a town of 11,000 people in the heart of some of the richest farm land in the U.S.

laboratory and advanced diagnostic equipment. You can, for example, breathe into a tube which will send the resultant information about your lungs by telephone to a computer 150 miles away at another clinic where a doctor at the clinic will diagnose certain ailments.

lack of cost control partly to lack of competition in what is nominally at least a competitive business, and partly to the failure of insurance companies to monitor hospital charges effectively.

inadequate cost control is only one element of the U.S. health care problem, albeit an important one. Another is the bias in the system, again reflected in the insurance method, towards curbing rather than preventing. Thus insurance plans will, to a greater or lesser extent, cover doctor or hospital bills when you are sick, but will not pay for routine check-ups.

adjacent to the hospital and charge patients in hospital. They split their fees equally, all being paid \$50,000 a year, a comparatively modest salary some would say but the doctors like the country life.

poor have risen to \$40bn. from \$5bn.—almost 9 per cent. of GNP—but health administration appears inequitable and vulnerable to fraud...

Wage inflation, too, has contributed, although medical costs have been the fastest growing sector of the consumer price index indicating that more than 90 per cent. of economic trends are affecting the health industry.

Mr. McVeety attributes the

1977 10 15 50

Joyce 1350

OVERSEAS NEWS

Critical murmurs aired in Iran

By Robert Graham

TEHRAN, May 9. An open letter from a distinguished writer published in the official paper of the country's single political party, the Islamic Consultative Assembly, has aroused considerable interest here. The letter, written by Ibrahim Khajeh Nuri and addressed to the party Secretary General, Mr. Jamshid Amouzegar, is the most clear-cut public call for discussion of the party's role since the Shah's overthrow of the multi-party system two years ago.

The letter is couched in cautious language but says quite clearly that cynicism and lack of enthusiasm together with general disbelief in public pronouncements are still major problems confronting the party. The letter suggests that too often the party has used its impetus once the ambitions of the party strongmen are satisfied. It is a fact that the authorities have permitted the publication of a letter of this kind. Normally such criticism is kept from the public domain.

Moro talks broaden

By Wong Sulong

KUALA LUMPUR, May 9. CARLOS ROMULO, the foreign ministers have rejected the results of the referendum held in the 13 provinces of the Southern Philippines on April 17 for Malaysia's help in ending the Muslim rebellion in the south.

Australia air strike continues

By Kenneth Randall

CANBERRA, May 9. AUSTRALIA'S crippling air strike against the Indonesian island of Irian Jaya is continuing next Monday, with only a few hopes of services resuming at the end of this week. At least 30,000 people in the island and associated industries are threatened with being cut off from the outside world by the stand-down orders.

Overwhelming support for independence in Djibouti

By James Buxton

DJIBOUTI, the last substantial European possession in Africa, has voted overwhelmingly to become independent of France on June 27, and has elected a constituent assembly in which the Somali-speaking Issas, one of the two main racial groups in the territory, will have a majority.

Algerian-French friction

By Eileen Funness

ALGIERS, May 9. FRANCO-ALGERIAN relations have taken a rapid turn for the worse over the past few days. Algerian Foreign Minister Abdelaziz Boufelfel has accused France of "fanning the flames of conflict in Africa" in an official reply to French accusations of Algerian-sponsored aggression against Mauritania after the guerrilla raid by Polisario Saharan Nationalists on Zouerate, where a French couple were killed and six French citizens kidnapped.

It has been claiming European support for the whole of the Somali-populated part of Ethiopia since a new agreement with Ethiopia in 1980. Ethiopian sources in Djibouti have been made, but any deal would have the advantage to Addis Ababa of reducing Somali support for the secessionist guerrillas in Eritrea. Ethiopia is reported to have suggested that the Soviet Union should support the Marxist-oriented Eritrean People's Liberation Front (EPLF) so as to defeat the other two Eritrean guerrilla groups. The intention would be that Eritrea would become an independent Marxist State which would allow continued Ethiopian access to its ports.

Zaire claims invaders are near defeat

KINSHASA, May 9. THE GOVERNMENT-controlled Voice of Zaire radio station said today that the invasion of the south-eastern province of Shaba (formerly Katanga) is as good as over. The radio commentary said that the Katanga ex-generals who invaded Shaba from Angola in early March, were in continuous retreat, and added, "their days are over."

Kuwait \$1.5bn. arms spending

By Anthony McDermott

KUWAIT is to spend about \$1.5bn. to modernise its armed forces over the next few years, according to Government sources in the capital yesterday. Some of this may be spent in Britain. Sheikh Saad Abdallah al Sabah, the Kuwait Defence Minister, arrives in Britain on May 23, and Kuwait is believed to be interested in buying more Chieftain tanks to add to the 165 it bought in February last year. It is also thought to be contemplating purchase of a Rapier air defence system, and patrol boats for the development of its navy.

Introduced that year but this was spent by the early part of 1976, whereupon a second budget of KD800m. (\$2.8m.) was introduced. The sum announced yesterday would appear to be in addition to the previous supplementary military budgets. Kuwait has been concentrating initially on building up its land and air forces, and is only now turning to the navy. For this it is in the market for fast patrol boats, and perhaps later hovercraft.

In keeping with its diversification policy, Kuwait announced at the end of March the purchase of SAM-7 ground-to-air missiles from the Soviet Union. The deal took two years to negotiate and was considerably smaller than the \$400m. mentioned at one stage in the negotiations. It is probable too that much of this new allocation to military spending will go on consolidating military agreements already concluded. Kuwait has a population of only 1m. of which more than half are non-Kuwaitis. It has found the absorption of such equipment as the Chieftain, which came into service last November, and advanced aircraft, a slow process. However, compulsory military service is to be introduced from the beginning of next year.

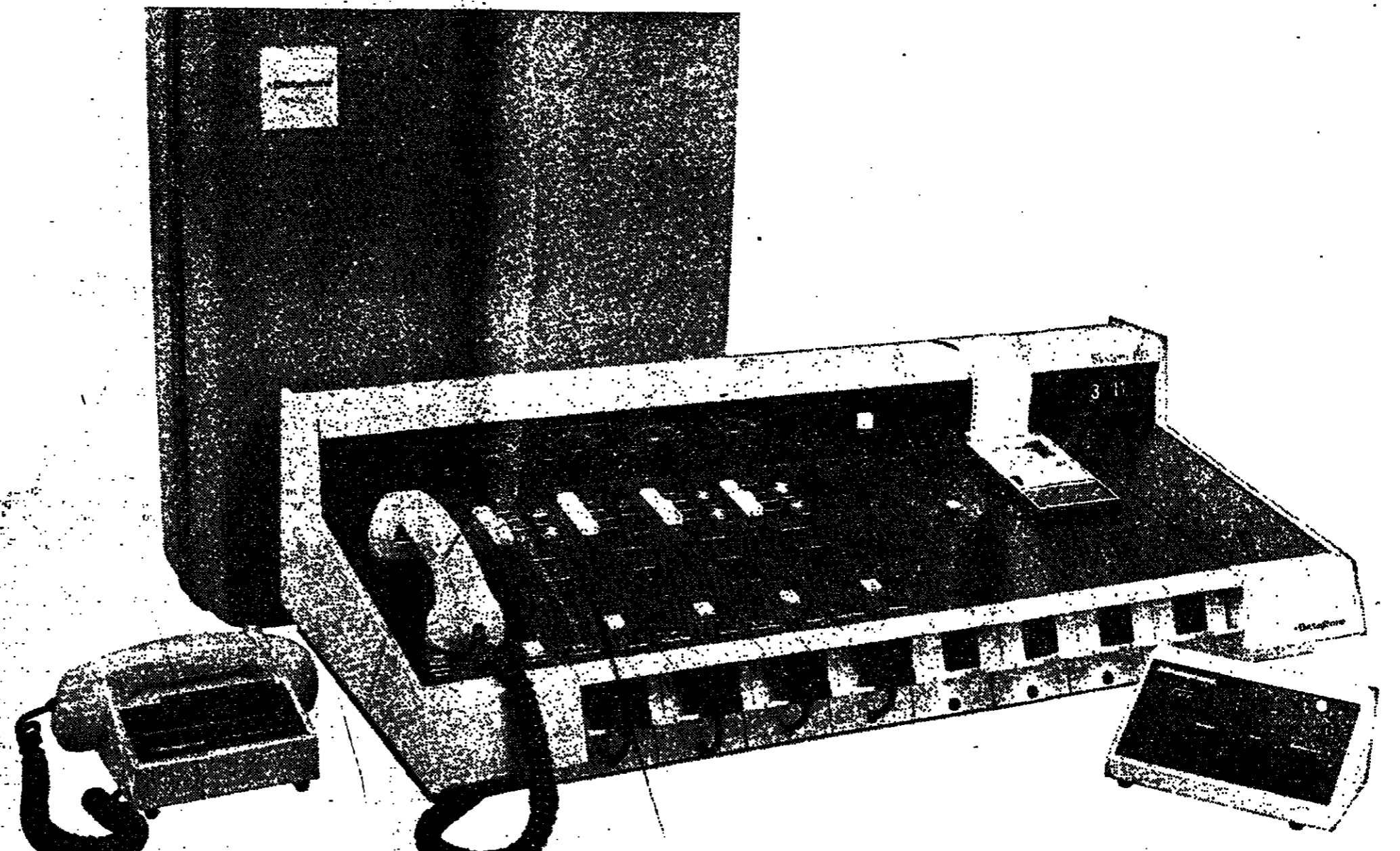
Rhodesia blacks die in crossfire

Salisbury, May 9.

THIRTY-FOUR black civilians have been killed, and another 31 wounded, in crossfire between security forces and black nationalist guerrillas, Rhodesian military officials said today. The officials gave no other details, but have organised a trip for correspondents to the scene of the killings, somewhere in south-eastern Rhodesia's Chiredzi tribal reserve, to start later today.

Western diplomatic sources said that the Zairean and Moroccan troops were making headway against the invaders, although their progress was slow and the invaders still control a large area of the province. The sources estimated the forward position of government troops in the south-eastern sector of Shaba at 50 miles east of Kasali, and in the north of the area occupied by the rebels.

in Rhodesia, one of the worst of the village of Mapiuta, Mozambique, for a four-day U.N. conference on 20 villagers, including nine Rhodesian and South-West Africa children, were killed and another 15 injured. In between he is due to visit Ghana, Nigeria and Gabon, and to fly to Lisbon on May 14 for talks with U.S. Vice-President for his second tour of black Africa, and perhaps a controversial visit to South Africa. Mr. Young flies first to Abidjan, capital of the Ivory Coast, for a meeting of U.S. and off several times. UPI

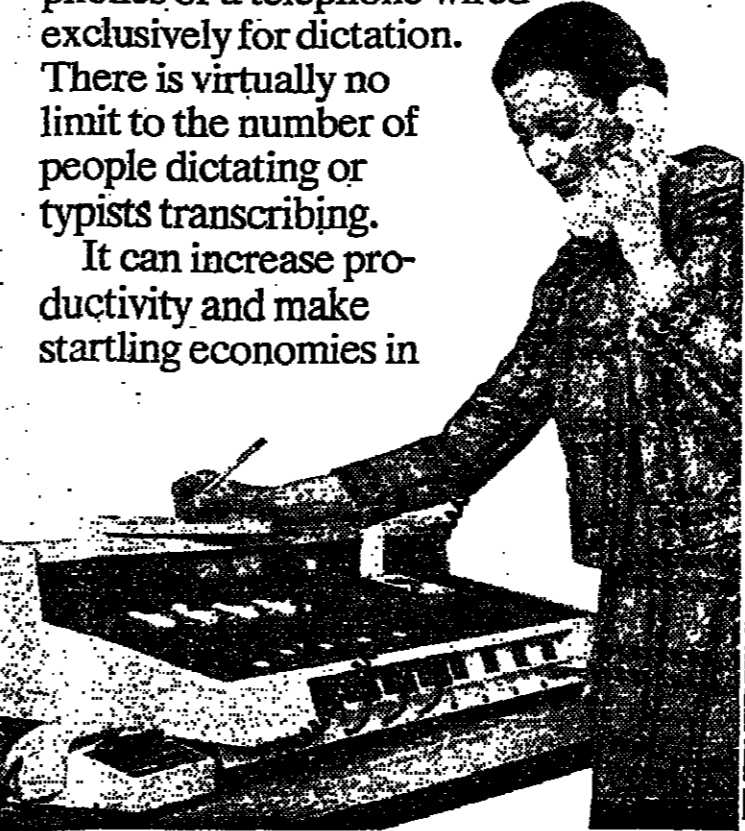


The first centralised dictation system to share out the work automatically.

Dictaphone's Thought Tank System 193 is the first centralised dictation system to employ computer logic to speed turnaround time in word processing centres. The unique feature of System 193 is its electronic Word Controller console. This unit keeps track of each typists workload and typing speed and automatically distributes the work to the one who can turn it round in the shortest possible time. By distributing the work according to the load, secretaries are kept fully occupied without being overburdened. Accurate measurement of input and output can be made at any time. The supervisor can tell from the control console when a peak load is occurring and bring in additional help or make the necessary adjustments to get the work out in time.

System 193 is based on endless loop tape, so there are no belts or cassettes to load or unload. It can be used with existing telephones or a telephone wired exclusively for dictation. There is virtually no limit to the number of people dictating or typists transcribing. It can increase productivity and make startling economies in

offices with high-volume dictation transcription requirements. Dictaphone's Thought Tank, System 193 does for word processing what the computer did for data processing. For full details, clip the coupon.



Dictaphone Company Ltd., Alpertown House, Bridgewater Road, Wembley, Middlesex HA0 1EH. Tel: 01-903 1477.

Please send me details of Dictaphone's new System 193.

Name _____ Company _____ Address _____



FT5/77

Table with 2 columns: Item and Value. Includes 'International Company News', 'More aid offered to UMF Stork', 'Farming and Raw Materials', 'Hong Kong commodity market closed', 'EC threat to U.K. farm boards'.

Joyce 13/50

THE VOLVO 244DL HAS JUST BEEN OVERTAKEN BY MOST OF ITS COMPETITION.

VOLVO 244DL	£4410
GRANADA GL 2 LITRE	£4455
AUDI 100LS	£4890
TRIUMPH 2500S	£5128
MERCEDES 200	£5350
ROVER 3500	£5983

All prices as at 5th May 1977, including Car Tax and VAT at current rate.

While other car makers have been sprinting ahead on prices, Volvo have been putting on the brakes. So much so that the Volvo 244DL is now something of a bargain.

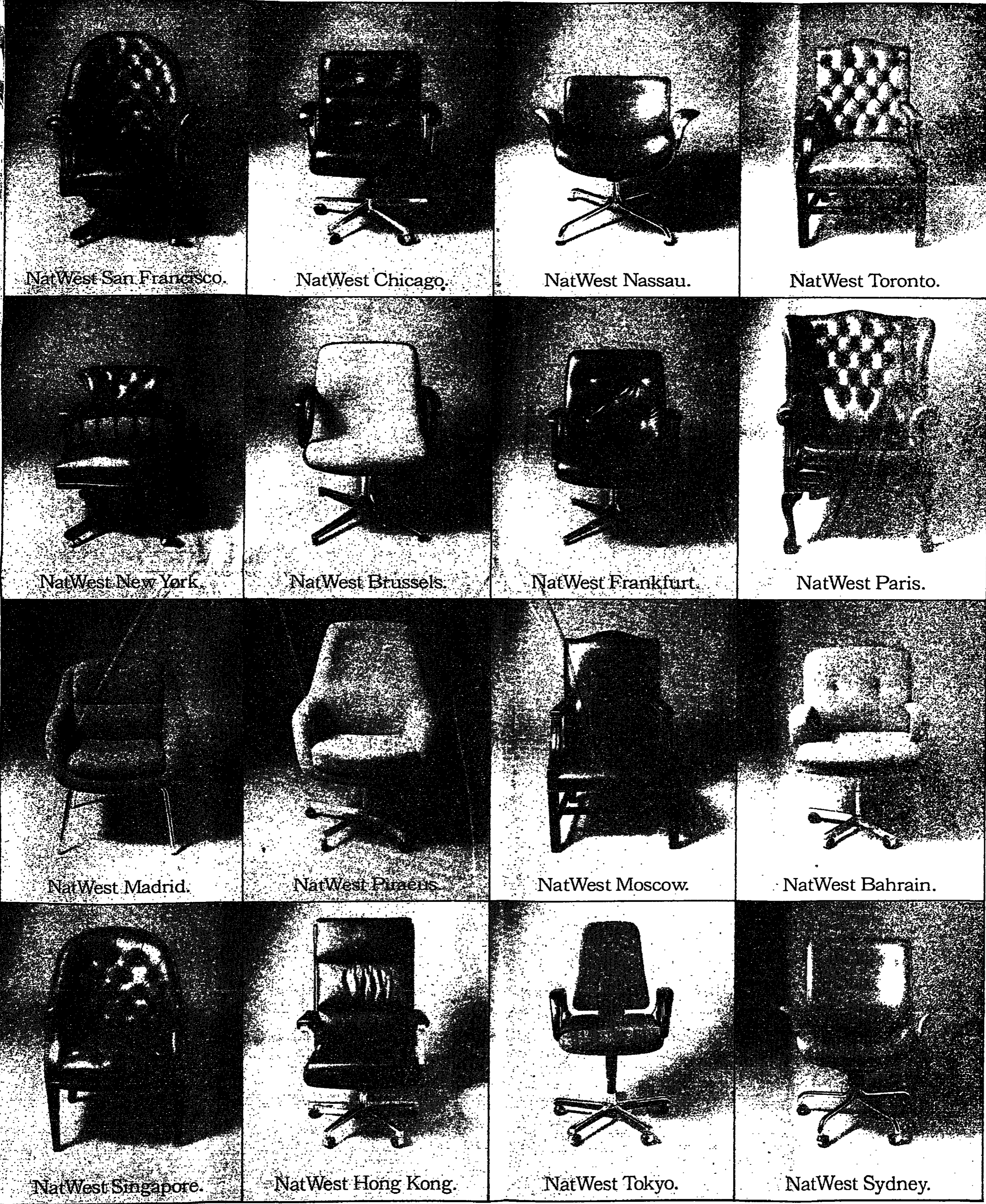
For your money you get a car with an almost legendary reputation for durability and safety — not to mention space and comfort.

Call in at your local Volvo dealer and take a test drive. You'll find his address in Yellow Pages.

These days you don't often get the chance to drive such a bargain. **VOLVO**

July 1975

NatWest didn't become International by sitting at home.



International financing for major corporations. Assistance to UK exporters. Dealing in the world's currencies—buying, selling, lending, and deposit taking. Global movement of funds. Specialist services for international industries such as oil, gas, shipping, etc.

National Westminster Bank Group
You've got us just where you want us.

Technical Page

EDITED BY ARTHUR BENNETT AND TED SCHOETERS

MATERIALS

Structural heat-proof synthetic

MOULDABLE and heat-hardening, a material described as "something between cement and plastic" by its developers in Japan, Osaka Cement and Nihon Hardan Kogyo KK of Nagoya, can be set at temperatures in the range 70-80 degrees C very quickly or formulated to cure at the speed selected by the user.

The ingredients have not been disclosed, apart from the fact that one of them is cement. But the company says all types of fibreglass structures can be made from it while it can be used for emergency repairs on roads or bridges.

Meanwhile, Takenaka Co., also of Osaka, is to launch a soil stabilising chemical it has developed on to the U.S. market.

The company made a licensing agreement with an unidentified Dutch company some time ago, but its U.S. venture will be the company's first fully-fledged venture into spreading its technology on world markets.

The chemical to be injected comes in liquid form and is introduced into the soil through drilled holes in the area to be consolidated. It reacts with moisture in the soil to create a more rigid structure.

Developed in co-operation with Dainippon Ink and Chemicals Co of Tokyo, it will be promoted in the U.S. by TJK Inc., based in Los Angeles.

from June will be in small sizes with maximum energy products between 5 and 6MGOe.

The mechanical and machining characteristics are claimed to be "far superior" to conventional magnets, and the advantages in size and weight are expected to give early applications in many light engineering areas. Matsushita Electric Industrial, Kadoma, Osaka 571.

INSTRUMENTS

Waveforms at low cost

BRITISH company cutting a patch of its own in electronic generators is Prosser Scientific Instruments. It has just announced a 20 volts peak-to-peak generator which, model for model, is stated to be priced some £45 below the cheapest and £170 below the most expensive competitors, all U.S. in origin.

Designed and manufactured in Ipswich, the PSI 1211 has a frequency range from 0.04MHz to 5.0MHz and offers sine, square, triangular, positive or negative ramp, and pulses of variable duty cycle. Main output is 20 volts peak-to-peak across either 50 or 600 ohms. A front panel control provides full adjustment of the pulse duty cycle from 10 to 90 per cent, regardless of frequency and has no effect on the parameters of the other waveforms. There are coarse and fine attenuators.

Waveforms can be DC offset to a maximum of ± 5.0 volts and in addition there are auxiliary TTL outputs and provision for sweeping the frequency from an external voltage source up to ± 5 volts.

Prosser claims to have about 5 per cent of the market for this kind of generator in the U.K. and now believes it is favourably placed to double this next year. The world market (of which the U.K. is about 8 per cent.) is worth some £10m. and at the moment is dominated by five U.S. companies. The quality of the design and the favourable trading position the company enjoys in relation to the competition should help it to reach its objective. More from Lady Lane, Huddersfield, Ipswich IP7 6DQ (047 338 3005).

ANYONE can operate a computer system, provided it is equipped with "Robot," an operating routine package—or software package—which will translate plain English instructions or queries into the much more constrained language the computer system is designed to obey.

Developers of Robot, Artificial Intelligence Corp. (AIC), say it operates by breaking down the instruction into sections small enough to permit correlation of their meaning with its internal functions. When it has decided what is wanted, the computer is instructed to carry out a job, look into its store of information or whatever, and the result is translated back into English.

So far, so good. But Robot is written in PL/I, needs 110 k-bytes and is expected to function under all 380/370 environments and there is no indication whether the company proposes to extend its development to other machines.

It will work with database management systems from ADR (Roscoe), Software AG (Adabas) and IBM (CICS and TSO).

The package costs \$30,000 and information on it is available from AIC at 3514 Pivers Mill Road, Kensington, Md. 20785, U.S.

By agreement between the Financial Times and the BBC, information from The Technical Page is available for use by the Corporation's External Services as source material for its overseas broadcasts.

SOFTWARE

English will be understood

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Developed as an experimental unit at IBM's San Jose laboratories, the display provides more sharply defined characters in black on white than is possible with a CRT.

Key to the development is a new, tiny laser device only 0.008 by 0.016 inch, yet able to produce up to 25 mW continuous output at room temperature.

This gallium arsenide laser is being further developed for the application and for other purposes at Yorktown Heights.

To write characters, the fine laser beam is directed at a liquid crystal in a flat glass cell. Two oscillating mirrors under the control of a small computer deflect the beam over a portion of the cell to produce a scanning motion in the horizontal and vertical axes.

The beam is turned off and on at the right times to form characters from overlapping spots in the liquid crystal, in a grid nine spots high and seven spots wide.

The display containing the liquid crystal also is equipped with lenses, mirrors and a light bulb that project reflected images of the characters being formed in the liquid crystal on to the viewing screen.

From a height in the crystal of only 0.004 inch, they are magnified to about one-tenth of an inch, say, pica font.

The heat from the laser beam causes the visible spots to form in the liquid crystal by disrupting the molecular alignment in a small area. The disarrayed

MACHINE TOOLS

Efficient fettling filter

FULLY AUTOMATIC filter cleaning is a feature of a range of foundry fettling benches introduced by Newport Forge and Engineering.

The filter banks are fitted with a jet system which blasts compressed air through them in 15 second pulses. This stops particle build-up, and eliminates the falling off in filter efficiency experienced with manually controlled systems.

Other advantages of the bench include a fully retractable overhead canopy and side curtain assembly, to facilitate crane loading and general access, and rugged construction in heavy gauge steel plate.

The benches can be fitted with an air operated rotary work table.

The maker is at Pant Glas Industrial Estate, Newport Road, Bedwas, Gwent. (02288 5711).

RESEARCH

Laser beam writes clearly

COMPETING to some extent with conventional cathode ray tube displays and, in several respects, much simpler to make than these, is a method of quickly reproducing information using a laser beam to write on a liquid crystal and a projector to blow up the characters thus written on a translucent screen.

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molecules then scatter the projection light. Because of the high viscosity of the medium, the written characters would last indefinitely. But they can be erased at speeds which defeat human vision simply by applying a voltage across the plates containing the liquid crystal. If applied selectively to the display, portions of it can be erased and fresh information written.

Speeds achieved so far are of the order of 20 characters per second, fast enough for working from keyboard, but not for working directly into an information store in a computer. Image forming may be accelerated by using lasers of higher power, improving optical systems, using liquid crystals with higher light sensitivity or applying several lasers working in parallel to write more than one row of spots at a time.

More from IBM Corporation, Research Division, San Jose, Calif. U.S.

HANDLING

Easier to go through the door

FORK LIFT users such as farmers and construction site operators can now obtain the benefit of free lift without having to buy a new truck incorporating the device. A free lift conversion kit has been developed by Moormer Engineering, Central Avenue, Congreaves Trading Estate, Cradley Heath, Warley, West Midlands (0854 68101), which can be fitted to new or existing machines.

Basically, free lift means the ability to raise the forks without moving the mast. The advantage is that the mast can be lifted without increasing the overall height of the machine.

Initially the kit from Moormer is intended for fitting to Manitou Series C 2, 24 and 3 ton machines. It provides five to six feet of free lift depending on the closed height of the mast—the forks ride up using the mast as rails. It is hydraulically operated, and a restrictor valve fitted to the free lift ram gives control of the descent in the event of a hose failure.

The maker says there is no loss of forward visibility through the mast.

Microfilm saves data search time

BURTON GROUP is using the Eurocom microfilm bureau service in a number of applications designed to save on computer usage and to provide a reliable back-up service when the computers are not available.

The Eurocom service is used in connection with Burton's credit control system. When a customer makes a purchase on his credit account, his credit status is checked by the branch by telephone to the Leeds head office where all account details are held on computer and assessed through a display.

Microfilm is used principally to provide off-line storage of account details over a certain age, and to provide a back-up inquiry service when the computer is out of action. In the first case, all account details more than about eight months old are regularly fed to magnetic tape and sent to Eurocom's Manchester bureau, where they are recorded on roll microfilm in the form of statements.

Use of microfilm for this application has numerous advantages over the alternative of computer print-out. Apart from the enormous difference in sheer bulk of material stored, the microfilm is more accessible and convenient in use. When dealing with customer queries, for example, the relevant record can be consulted in seconds, and can if necessary be immediately printed as a statement for despatch to the customer.

Storing accounts on roll film makes it almost impossible to lose records; and full security is assured by keeping a spare copy of the film.

Eurocom Data, 3, High Street, Rickmansworth, Herts. Rickmansworth 74323.

COMPUTING

Wands read prices at the tills

AFTER A PERIOD of quiet, attributable probably to uncertainty as to what ICL would eventually decide on the point-of-sale side of its Singer acquisition, sales of the ICL-supported equipment are on the move.

Curry's T. Bridger and Sons subsidiary is using "909" point of sale units from ICL at its home-care centre newly opened at Swinton, Manchester, to provide full transaction support.

The company has some eight Bridger centres in the U.K., offering discount on electrical goods and its move in to homecare products has raised the stock list of 1,000 electrical items to over 6,000, including wallpaper and paint as well as other DIY goods.

The increase in products made manual control cumbersome and this has led to the introduction of pos terminals, each with an optical character recognition wand. The output from the terminals goes to a recording cassette recorder.

Apart from capturing information on actual sales, the units record sales with discount, refunds, staff expenses, store banking, accounts payments, goods

Evaluating wave power devices

The 20m. flagpole — a steel column of 140mm diameter tubing—rises from the bed of the Loch to a height of 4.5m above the surface.

Attached to a concentric sleeve which may be raised or lowered to suit the mean water level, is a triangular array of seven capacitance wires held in tension to permit measurement of the variation of the water level as a wave passes. This variation will be utilised to calculate the energy in waves as well as the principal direction and spread of the energy.

BSRA is assisting in the planning of tests for a second wave energy project, involving a series of rafts hinged together in line

astern, to be undertaken in the Solent between Southampton Water and the Isle of Wight. In this case the Association will supply another flagpole structure, reinforced to withstand sea conditions and with certain parts made of non-ferrous material, in addition to wave motion measuring equipment and a special data analysis package.

Early investigation of wave-energy extraction devices have proved encouraging, and the Department of Energy is more than doubling its spending on associated research and development, bringing the total to some £3.5m. BSRA is at Walswood (0832) 63242.

Sun drives water pump

The gas drives a Rankine-cycle turbine which operates the irrigation pump. The water, having heated the Freon, is returned to the solar collectors.

Freon exhausted from the turbine is then circulated through a regenerator heat exchanger and a condenser, to convert it back into a liquid, ready to begin a new cycle.

In the solar-powered system, water is drawn from a sump basin to an irrigation canal where it is channelled to the fields. The system is automatic. Sensors aim the solar collectors at the sun in the morning, and, as the sun moves across the sky, track it throughout the day. The same sensing devices also rotate the collectors to a storage position at night or during storms.

SOLAR-POWERED, an irrigation system installed near Phoenix, Arizona, is capable of driving a 50 hp pump which will deliver 10,000 gallons per minute of water at peak operation.

It has 5,500 square feet of parabolic tracking solar collectors, and was developed as part of a multipoint co-operative programme between Northwestern Mutual Life (NML), one of the largest U.S. insurers, and Battelle.

Water is pumped under pressure into the solar collectors. Solar energy from the collectors heats it to a high temperature.

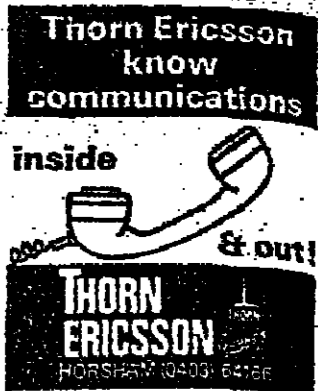
The water then flows to a boiler where it heats liquid Freon until it changes to a gas.

This is done to lessen the chance of damage to the reflective surfaces of the collectors. A backup control system is available for emergency situations.

In June, during the longest days of the year, the system can deliver up to 5.6m. gallons of water over a period of 9 1/2 hours. While there is at present no provision for energy storage to allow for longer periods of operation, this feature can be incorporated if desired.

The 50-horsepower pump size was chosen because it is large enough to provide a meaningful demonstration of commercial size and to be scaled up to 200 or 250 horsepower at a later time.

More from Battelle, Columbus Laboratories, 505, King Avenue, Columbus, Ohio 43201, U.S.



received, goods returned and goods transferred to other branches.

The cassette is replayed for conversion to nine-track tape and this goes to the company's data centre where transaction data and management interpretations are extracted.

Data recording will be simplified by the use of OCR stickers on smaller items carrying the price and stock code.

More from ICL on 01-788 7272.

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Use of microfilm for this application has numerous advantages over the alternative of computer print-out. Apart from the enormous difference in sheer bulk of material stored, the microfilm is more accessible and convenient in use. When dealing with customer queries, for example, the relevant record can be consulted in seconds, and can if necessary be immediately printed as a statement for despatch to the customer.

Storing accounts on roll film makes it almost impossible to lose records; and full security is assured by keeping a spare copy of the film.

Eurocom Data, 3, High Street, Rickmansworth, Herts. Rickmansworth 74323.

Wang

For 25 years the American small computer specialist has developed equipment suited to all sorts and all sizes of companies.

High reliability, state-of-the-art technology and competitive pricing have made Wang's reputation throughout the world.

Wang Laboratories, Inc. was founded by Dr. An Wang in 1951 in Boston, USA. Since those early days when its products included specialized data

the large computer and mechanical calculator. In 1969 Wang was the first to use magnetic tape cassettes and also first to offer plug in programs.

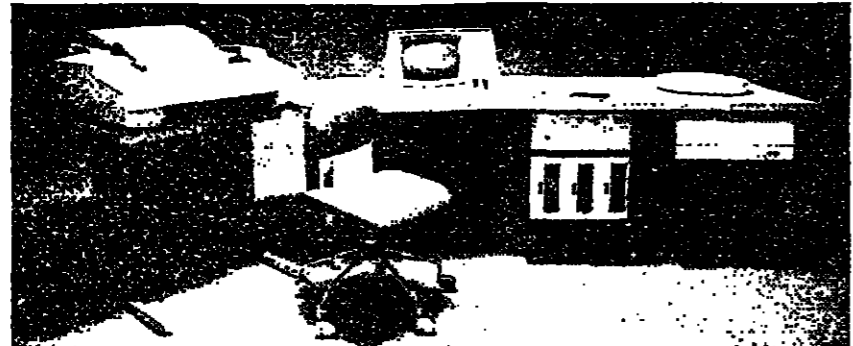
is much larger and includes extensive peripheral equipment to satisfy any user requirement.

Wang computers carry out day-to-day work faster, more efficiently and more reliably. They are easy to use, and thousands of businesses already rely on them in general management, finance, forecasting, scientific research, and numerous other applications.

Wang has a worldwide field organisation in over 50 countries to provide maintenance, assistance, and user support. Wang is ready for you, chances are you are ready for us.



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European Headquarters
Avenue Louise 250 B-1050 Brussels



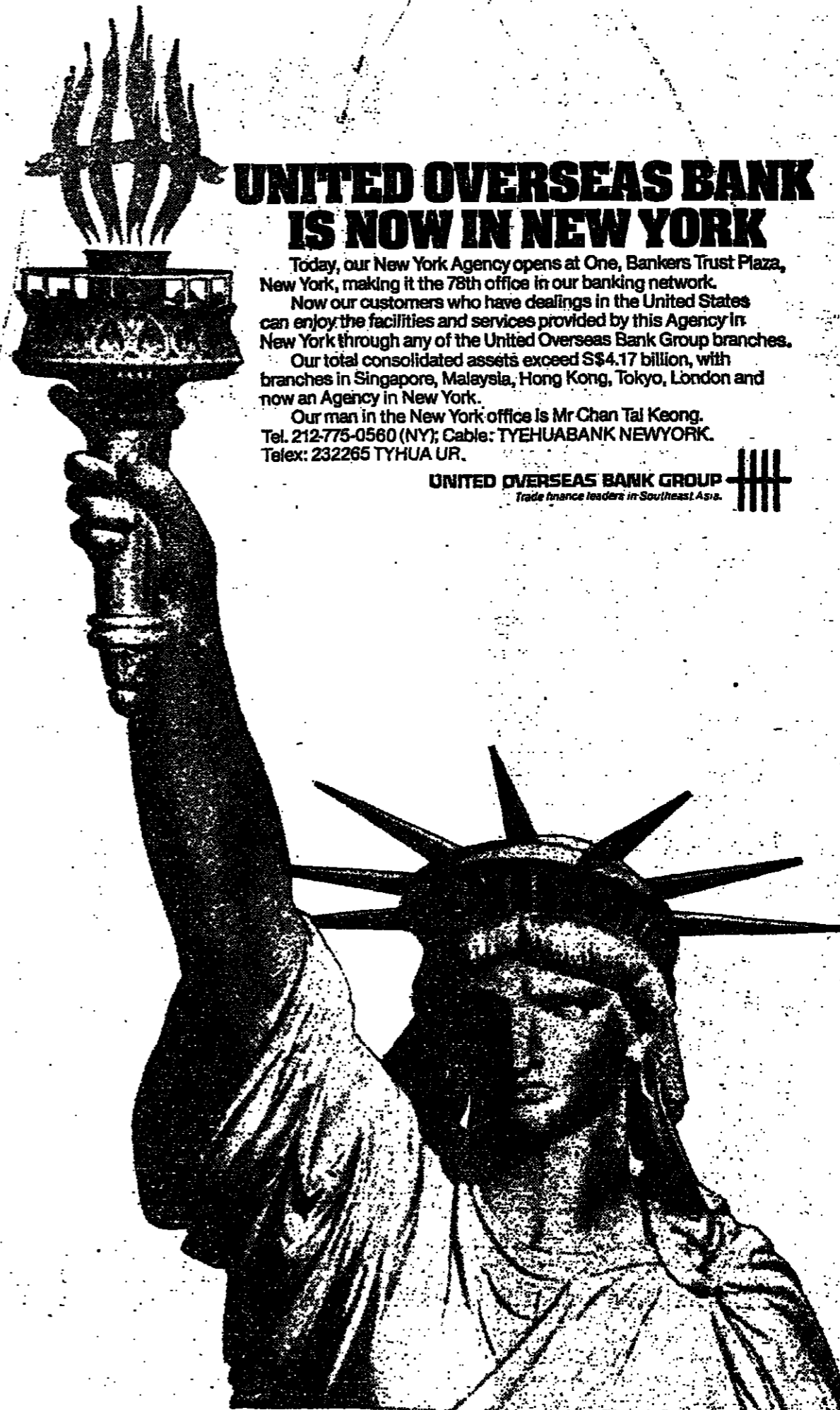
Wang's range of small computer systems has been steadily evolved. Every item developed by Wang in the USA.

handling equipment, the company has steadily expanded. Today Wang is a world leader in small computer systems.

It was natural that Wang should expand its activities into more powerful calculators, into small computers.

Find a need and fill it: Wang's philosophy
In the early sixties Wang pioneered the electronic calculator to bridge the gap between

Wang: pioneering the advance of technology
In 1972 Wang introduced its first small computer system. And again incorporated totally new concepts. Today the range



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HOME NEWS

Ministers could pave way on Russian trade

BY RAY DAFTER, ENERGY CORRESPONDENT

MR. ANTHONY Wedgwood... Mr. Wedgwood will be... Mr. Wedgwood will be... Mr. Wedgwood will be...

Scott Lithgow seeks £45m. naval order

SCOTT LITHGOW, Lower Clyde... Mr. Lithgow is hoping to... Mr. Lithgow is hoping to...

Banks renew fight against takeover call

FINANCIAL TIMES REPORTER

THE BIG banks' battle against... The Liberal Party will... The Liberal Party will...

Rolls-Royce may lift veil on new jet engines

BY MICHAEL DONNE, AEROSPACE CORRESPONDENT

ROLLS-ROYCE is expected to... The decision to go ahead... The decision to go ahead...

Commons reassurance for British Rail

By Ian Fargher, Transport Correspondent

A COMMONS Select Committee... The committee's report... The committee's report...

Progress on the White Paper... The all-party select committee... The all-party select committee...

The committee's line will be... The committee's line will be... The committee's line will be...

U.K. output rise unlikely to beat 1%

BY PETER RIDDELL

WHILE world leaders of the... The prospects for the U.K. are... The prospects for the U.K. are...

Almost all forecasters agree... A general unanimity of view... A general unanimity of view...

Consumer spending is expected... This reflects the expected... This reflects the expected...

The main exception among the... The main exception among the... The main exception among the...

It is also, consequently, the... It is also, consequently, the... It is also, consequently, the...

FORECASTS OF ECONOMY—1977 COMPARED WITH 1976. Table with columns for % change in 1970 prices, Treasury, London Business School, CBI, OECD, National Institute, Phillips & Drew, Henley Centre.

ALL THE forecasts were made... The Organisation of Economic... The Organisation of Economic...

The main exception among the... The main exception among the... The main exception among the...

next year after a rise of about... The implications of this for... The implications of this for...

The CBI staff analysis... The CBI staff analysis... The CBI staff analysis...

On inflation, most of the... On inflation, most of the... On inflation, most of the...

The Treasury forecast is for... The Treasury forecast is for... The Treasury forecast is for...

The Treasury forecast is for... The Treasury forecast is for... The Treasury forecast is for...

Green Shield stamps agree, the housewife deserves the best value that's why they will continue to get it from our gift houses and over 7,000 food stores

The decision of Tesco no longer to give their customers the Green Shield extra discount is regretted, but not entirely unexpected. This news however opens the door to many many other food retailers who have patiently sought a Green Shield franchise for many years.

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PARLIAMENT and POLITICS

Petrol tax problem will not go away—Barnett

BY JOHN HUNT, PARLIAMENTARY CORRESPONDENT

A STRONG warning was given in the Commons yesterday by Mr. Joel Barnett, Chief Secretary to the Treasury...



MR. JOEL BARNETT Warning to garages

Mr. Barnett was speaking on the first day of the Commons stage of the Finance Bill when the Government, in response to pressure from the Liberals and Tories, moved an amendment to remove from August 5 the 5p increase in duty which the Chancellor imposed in his March Budget.

The Chief Secretary emphasised that the decision to rescind the increase was only being taken as a result of pressure on the Government.

"I still believe the arguments for the petrol tax increase are sound. As far as I am concerned, and the Government is concerned, we would have preferred to keep the whole clause. I make no bones about it.

allowing the level of petrol duty to fall in real terms was the way to do it. The real way to help those affected by higher petrol prices was through improved public transport...

He argued the climb-down was not a fruit of the Lib-Lab pact but a result of the Parliamentary arithmetic which has been forced on this Government by the changes in control the British people have effected in by-election after by-election.

Mr. Pardee suggested that Sir Geoffrey should have sounded more welcoming. "Your constituents are going to benefit just as much as mine. You could have sounded a little more glad. Parliamentary arithmetic has actually done something for your constituents and mine."

CALLAGHAN PRESSED ON VALUE OF TALKS

Summit 'platitudes' claim rejected

BY IVOR OWEN, PARLIAMENTARY STAFF

OBJECTIVES AGREED at the Downing Street summit will not affect the Government's commitment to give first priority to overcoming inflation...

But in making it clear that Britain will continue to pursue "our stabilisation policies," he vigorously rejected suggestions that the aims endorsed by the Prime Minister assured the Commons yesterday.

In agreeing to monitor the rate of growth in world trade, he said, those countries which were growing faster had indicated their willingness, if Minister stated: "Our task at

Inflation

Acknowledging the inflationary dangers of a premature reflation by Britain, the Prime Minister insisted: "Our first task is to overcome inflation—then we can resume non-inflationary growth."

Stressing that there would be no such policy change, Mr. Callaghan argued that reducing inflation and reducing unemployment went hand in hand. The Government's position was straightforward. "The smaller the increase we have in earnings this year, the lower will be our rate of inflation next year. There is a direct correlation between the two."

the moment is to pursue our stabilisation policies." An improvement was undoubtedly taking place in the balance of payments and he forecast that there would be further improvements in the months ahead.

In a bitter outburst, Mr. Dennis Skinner (Lab. Boleover) recalled that unemployment in Britain had increased from 1.5m in the period between the first summit at Rambouillet and the weekend gathering at Downing Street.

Mr. Callaghan retorted that his series of slogans which did not bear much relationship to reality. Skinner: "That is what they are saying on the streets."

Burden on Ministers 'not fault of officials'

By Rupert Cornwell, Lobby

SIR DOUGLAS ALLEN, head of the Home Civil Service, yesterday strongly refuted suggestions that the main responsibility for the excessive burden of work borne by Ministers lay with their departmental officials.

Sir Douglas admitted that Ministers under the present system were badly handicapped by overwork. But he laid the blame primarily on their duty to attend the Commons, the amount of correspondence they had to answer, and the increasingly technical work of inter-ministerial committees.

His remarks came during evidence to the influential Commons Expenditure sub-committee, in almost its last hearing before it draws up its report on the state of the civil service, due to be made public this summer.

Resilience and strength to surmount difficulties

In a statement on the summit, the Prime Minister said that nearly a year had elapsed since the previous meeting in Puerto Rico, and there was a general feeling among the leaders of the major industrial democracies to consult, to exchange experiences and ideas and to harmonise as far as possible our responses to our shared problems...

growth or for stabilisation policies. We recognised that growth rates must be maintained in the stronger economies, increased in the weaker economies, and inflation tackled successfully in both. If we are to cut unemployment and provide a basis for sustained non-inflationary growth...

with the nuclear dilemma. The present generation has an awesome responsibility for the future of mankind. We agreed to launch an urgent study, the first stage of which we intend will be completed within two months, of how to reconcile the world's demand for nuclear power with the need to avoid the spread of nuclear weapons.

More horses may be used—Peer

RISING PETROL prices, car taxes, and inflation mean that horses may be used more and more in the next few years. Lord Newall told the Lords yesterday...

of young farmers. In future, apprenticeships would be augmented by formal courses in colleges. There were proposals for setting up a national school for farmers and discussions were taking place on possible financial help from the Government for students.

Lord Helsby said that in many parts of the country the standard of the craft needed to be raised. It was important that the registration scheme should start working very quickly. In the long run, the health of the craft depended on the flow of well trained new entrants.

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If you run a business you must consider now what you are going to do about provision of pension benefits from April 1978. You could rely entirely on the State. You could arrange a scheme to supplement the State Pension. Or alternatively contract out. Considering, negotiating and setting up your own scheme is a process which takes months rather than days or weeks. Fortunately you can make things very much easier for yourself by choosing the Equity & Law Adaptable Pension Scheme. The scheme is designed to cater for companies who wish to contract out, or to supplement the new state benefits. *It streamlines administration and paperwork. *It provides benefits on competitive terms. *It gives employers flexibility in choice of benefits in a form which will be approved by the Government. 1978 isn't as far away as it might seem. So contact your pension advisers now.

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Written Answers

TREASURY Mr. David Mitchell (Con, Basingstoke). Whether the general agreement at the Fiscal Council's discussion in Brussels in February, 1977 that member States should be free to maintain their existing turnover limits for exemption from VAT prevents the U.K. from doubling its existing turnover limits for this purpose?

73), £255m. (1973-74), £289m. (1974-75) and £368m. (1975-76). Information for 1976-77 is not yet available. Since April 1 1973 value added tax at the standard rate has been charged in addition.

State pension regulations

BY ERIC SHORT

MR. STANLEY ORME, Minister for Social Security yesterday announced the conditions under which people who, for various reasons, do not go to work, will have their pension rights maintained under the new State pension scheme which starts in April 1978.

Commons cost

THE RUNNING OF THE House of Commons now costs over £44m a year, the Financial Times has written reply yesterday. Of this, nearly £4m went to MPs' salaries and another £4m to MPs' expenses. Staff salaries and allowances accounted for £3m, and general expenses another £1m.

Mr. Donald Davies, Minister of State, Corporation tax has formed the following percentage of total central Government revenue from taxation in the past eight financial years:— 11.4 per cent. (1968-70), 10.4 per cent. (1970-71), 9.6 per cent. (1971-72), 9.3 per cent. (1972-73), 13.0 per cent. (1973-74), 12.9 per cent. (1974-75), 7.1 per cent. (1975-76) and 8.2 per cent. (1976-77 provisional).

Advertisement for CHEMCO EQUIPMENT FINANCE LTD., U.K. subsidiary of CHEMICAL BANK New York. announces that it has provided funds for the first Honeywell 66/05 computer installation in the U.K. for HARDY AND CO. (FURNISHERS) LTD. CHEMCO EQUIPMENT FINANCE LTD. Richard Holloway, General Manager 85-87 Jermyn Street, London SW1Y 6JD. Tel.: 01/839 54 51

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The Management Page

EDITED BY CHRISTOPHER LORENZ

Japanese moves to set up overseas manufacturing units are posing the question of how host countries will react. Geoffrey Owen explains

When East meets West on home ground

AS MOST Western businessmen forced to do so. There is a Japanese plant, as it would have seen it, the strength of Japanese "follow-my-leader" tendency done in the past, NMB chose to industry is based on the scale in Japanese industry; once one close the learning gap by manu- and high productivity of plants company takes the plunge in a factoring in the U.S.

NMB had planned to re-equip the American plant with Japanese machinery, but the shipment was delayed by seamen's strike and the management had to make do with what was there. The result was that the Japanese learnt a great deal about American production methods and realised that the machinery they had planned to install was quite inappropriate. "American production methods," says Tsurumi, "are designed to maximise the utilisation of scarce man-hours. The breadth of skill of American machinists and technicians often permits them to operate multifunctional machines at much higher speeds and with greater precision than their Japanese counterparts."

Learning gap

NMB bought its first U.S. plant (from SKF) in 1971. The company had been successfully selling its standard ball bearings in Japan, but this was a market more fully served by a more fiercely competitive business from closer contact with U.S. management skills and research and development.

The process is still at an early stage; a company like Toyota, Japan's largest exporter, is showing no great eagerness to put up a major sales engineering plant in the U.S. or Europe, but it may eventually be the necessary know-how to its



Royal eyes on Sony's television factory in Bridgend, South Wales. How should the host countries react if Japanese companies become more visible; not merely as importers, but as employers? One of the first TV makers to invest in Europe and the U.S. Sony has been followed by Matsushita and others. But Japan's largest exporter, Toyota, shows no great eagerness to adopt a similar policy.

corporate finance. The shares of NMB (U.S.) were traded on the over-the-counter market, providing a new source of capital, while NMB (Singapore) would tap the Singapore financial markets. More acquisitions have subsequently been made in the U.S.

In high-technology industries like electronics and computers Japanese companies have looked to the U.S. both as a market and as a means of supplementing their own research and development resources. This can be done by forming an alliance with one of the many small science-based companies "spun off" from large American corporations. Thus Fujitsu, one of the leading computer companies, bought a minority stake in Amdahl, which was the standard commercial-grade computer, complementing the Japanese and American competitor to IBM in certain territories. This new multinational approach was even extended to

Siemens on computers, as has been restrained those American companies from making predatory moves in Bridgestone's own territory in the Far East. Tsurumi speaks of an "exchange of hostages" whereby Japanese acquisitions in the U.S. are designed in part to counter the pressure from American companies in the Far East, using their offshore production bases in countries like Taiwan and Korea to attack the Japanese market.

A not dissimilar process has been taking place in natural resource industries such as aluminium. The international majors, says Tsurumi, "are entering the Japanese market in the processing and fabrication of raw materials so that they might be in a position to invoke the strategy of 'exchange of hostages'. Second, they are inviting Japanese firms into international consortia so that the interlocked economic and political interests between Japanese and foreign firms might

Two corporate cultures

AS JAPANESE companies increase their manufacturing investments in the U.S., the potential conflicts between Japanese and American corporate culture become more evident. While American senior executives are accustomed to give orders and expect their subordinates to obey them, the Japanese emphasise decision-making by consensus.

In a U.S. company each manager is trained for his particular job and has well-defined responsibilities. In Japan there is greater emphasis on teamwork and on the ability of any member to stand in for one of his colleagues. Mr. Tsurumi draws an analogy with volleyball, a very popular game in Japan.

The size of the team is small enough to permit intimate face-to-face communication among the team members," he says. "Although individuals are expected to develop their own expertise and special plays, they rotate not only the server's role but also the defence positions. By practising together and by sharing both personal and team lives, the members get to know one another so well that their mode of communication takes on implicit phrases and expressions, rather than explicit verbal discussions." U.S. corporate life, by contrast might be compared with American football, with its pre-planned strategies and precise division of labour among the players.

The differences in corporate culture may be illustrated in the following three examples: moderate Japanese "rate-business" conduct. "A significant development in this field was the purchase by Mitsui in 1973 of a 50 per cent stake in the U.S. aluminium subsidiary of AMAX, one of the major U.S. aluminium and fabricating companies."

Because of the differences in culture and management style (see inset), there is great scope for misunderstanding and even hostility as the Japanese presence in the U.S. and Western Europe increases in importance. It may be that the sort of attitudes shown in the

U.S. "When management miscalculates or when the economic chips are down, the responsibility should be borne from the top. Dividends should be cut. Then top executives' salaries should be cut. Middle management's salaries should be reduced before management can ask the rank and file employees to shoulder the economic burdens of a business downturn. Job security maintains the basic order in the firm. The fear of an individual's job loss cannot be used to motivate employees."

Business courses

Doing Business in the United States, World Trade Institute, Egham, Surrey, TW20 0HW. Investment for Production, Brunel University, May 23-25. Fee: £205.20. Details from the World Trade Institute, World Trade Centre, St. Katherine-by-the-Tower, London. Solving Problems by Statistics, Commonwealth House, London, May 24. Fee: £40 plus details from AMR International, 1AT, Details from P-E Stimulis, Park House, Place, London W2 2HD.

"PERFORMANCE IMPROVEMENT"

Man management by action, not words

BY SUE CAMERON

A MAN management system that relies on tangible measurement rather than psychological permissibility is to be launched in Britain this summer. It has already been used by a large number of companies in the U.S., Australia and Europe, with airlines, including SAS, providing a particularly strong market.

The system is called performance improvement and it is the brainchild of Mr. Edward Feeney, an American management consultant. Mr. Feeney claims that the techniques he has developed can help companies to increase their production rates while at the same time raising the quality of the goods or services they sell. He says organisations can measure their results in the one way that really matters—hard cash savings.

Performance improvement is based on the idea that people work harder and more efficiently if they are rewarded for doing well. Rewards need not necessarily be financial. They may take the form of praise, promotion or greater opportunities to do more pleasant tasks.

Poor work

The notion that effort and excellence should be rewarded is so widely accepted that it sounds commonplace. Yet Mr. Feeney believes that at present many companies actually reward people for poor work. He says, for instance, that it is often in an employee's best interests to work slowly because then he will stand a greater chance of earning extra pay through overtime.

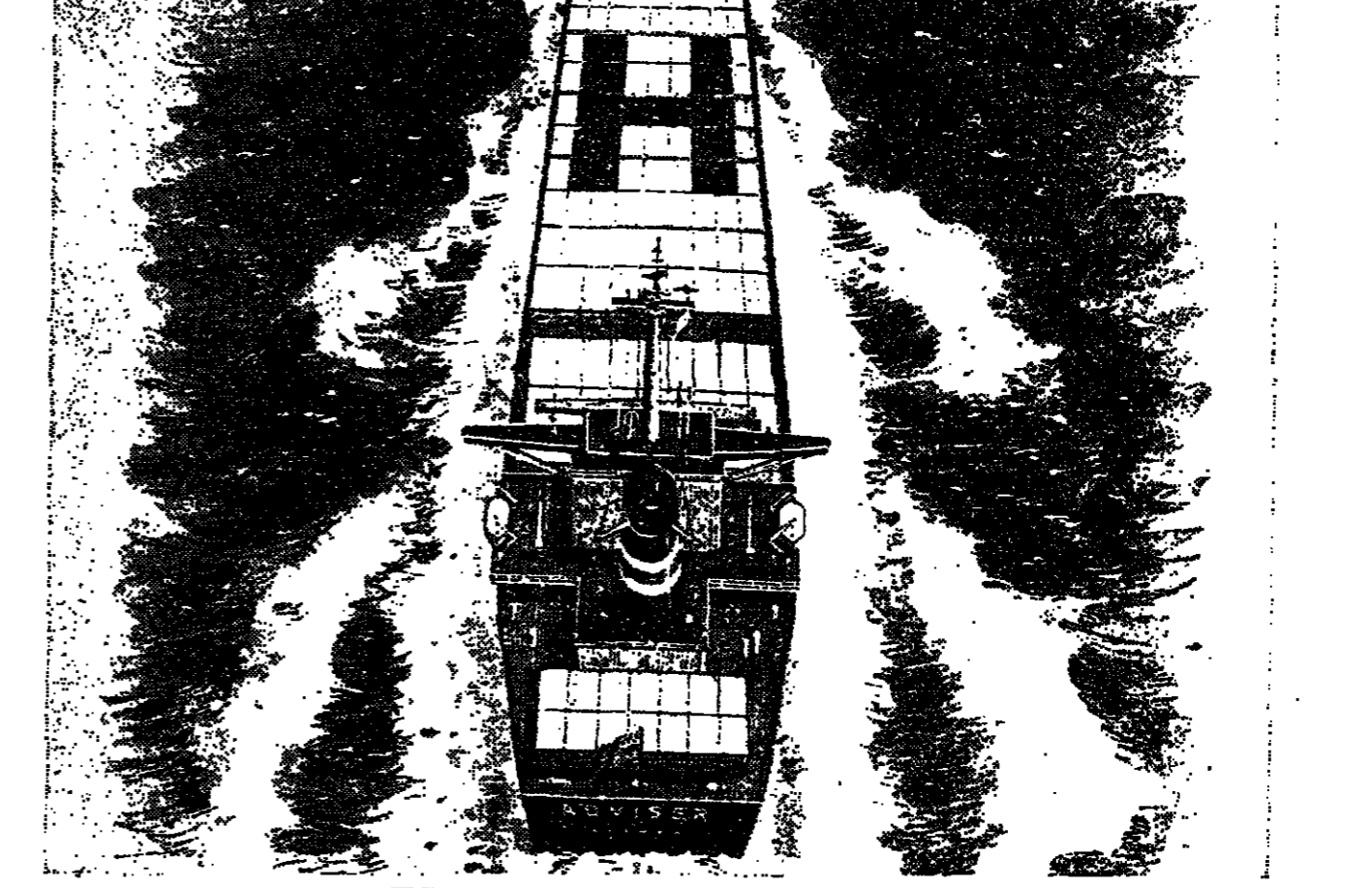
Under the performance improvement system, rewards are only given when it is certain that they will act as an incentive to greater effort. Mr. Feeney also says that if people are to show a consistent improvement in their work standards they must be rewarded every time they do well and they must be rewarded quickly. He insists that bonuses or congratulatory notes which come round months after a task has been successfully completed have no motivating effect whatever on employees.

Companies which use performance improvement programmes only reward people for a measurable increase in work efficiency and Mr. Feeney says that this is a vital factor in the success of his system. The first thing that has to be done under a performance improvement programme, therefore, is to measure the amount of work being done by each

Better ways to prepare youth for work

RECENT POLICY developments by several governments indicate that attempts are being made to ensure that young people are better prepared within the school system for working life and are provided with new training opportunities, as well as effective guidance and placement services. But it is clear that specific measures in favour of young people will not suffice unless they are part of a coordinated policy for creating new jobs and providing wage and salary incentives to those with specific skills and abilities.

This is one of the conclusions of a report just published by the Organisation for Economic Co-operation and Development entitled "Entry of Young People into Working Life." It has been produced in response to the concern among OECD member governments about the recent serious rise in youth unemployment. Divided into two parts, the first looks at reasons why it has become difficult to integrate young people into working life and analyses recent trends in youth education, attitudes and aspirations, and how these relate to the evolution of employment requirements.



Now, as part of the new CAROL consortium, the Harrison Line contains the Caribbean.

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During 1977, CAROL—short for Caribbean Overseas Lines—will provide frequent and regular sailings of specially built 21-knot container ships from Bremerhaven, Hamburg, Amsterdam, Antwerp, Tilbury, Le Havre and Liverpool direct to as many as 10 Caribbean ports: Bridgetown (Barbados), Port of Spain (Trinidad), Oranjestad (Aruba), Willemstad (Curacao), San Juan (Puerto Rico), Rio Haina (Dominican Republic), Port au Prince (Haiti), Kingston (Jamaica), Santo Tomas de Castilla (Guatemala), and Puerto Cortes (Honduras).

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Politics behind the Bamboo Curtain

By COLINA MacDOUGALL, recently in China



Teng Hsiao-ping



Hua Kuo-feng

Waiting for good news

THE CONTINUED rapid increase in prices is a demonstration of how powerful an influence the exchange rate is on the price level.

There has been an unresolved argument, ever since anyone can remember, between those who attribute inflation to wage pressures and those who attribute it to the excessive growth of the money supply.

Similarly, the impact of wage push is not nearly as direct as some Ministerial statements suggest.

Agenda for the NATO meeting

AFTER SPENDING the week-end dealing primarily with economic questions, the leaders of the main industrial democracies have now turned their attention to security.

In one sense there is an overlap here: a great deal of yesterday's discussions on Berlin is directly relevant to the NATO summit meeting today.

There is no doubt at all about Carter's toughness to tackle them.

As on the economy, so on detente and security, the industrial democracies will have a better chance of success the more they act together.

WHEN HUA Kuo-feng met Mrs. Margaret Thatcher, he was looking every inch a chairman with his new longer hairstyle and an elegant grey suit.

Combine that with the fact that studios and factories throughout China are turning out representations of the late Premier Chou En-lai based on an official photo which shows him about two stone heavier than at the time of his death.

The enemies of Teng

Another foe in Peking may be Wu Teh, the chief party man in the capital, who also rose to the top in the Cultural Revolution.

This scenario goes as follows: The two leaders in Kwangtung province in the south, Hsu Shih-yu and Wei Kuo-ching, both politbureau members, are Teng's chief supporters.

When Teng was sacked from the vice-presidential and Party posts in April 1976, so the story goes, he retired to the hot springs outside Canton under the aegis of the Kwangtung leaders Hsu Shih-yu, commander of the Canton Military Region, and Wei Kuo-ching, party and administrative boss.

repeated on Peking radio, for fifth being Mao himself in the sense that he made no public moves against the gang.

Although Hua is identifying himself with policies of the 1950s, which were much more flexible than those of later years, he has nailed his colours to Mao Tse-tung's mast in no uncertain terms.



areas of China's richest farmland and perhaps even the leading industrial centre of Shanghai.

So widely speculative is this interesting theory that it came as a shock when some indirect confirmation appeared forthcoming in Canton.

Connally's people are hoping to attract U.K. industry, but London only merited a flying visit.

Gold into dollars

A minor, and at first sight slightly confusing, revolution has occurred on the staid, but accurate, Stock Exchange Daily Official List.

The reasons behind this change are to be found in the sharply diminished attractiveness of gold and other foreign shares for the U.K. investor since the introduction of the investment dollar surrender-rules.

Poetic injustice

A poem to commemorate the redecoration of St. Mary's Parish Church, Liss, in Hampshire, last month appeared to indicate a ruthless approach to labour relations.

MEN AND MATTERS

Reminders from John Connally

The tall, rangy Texan with the tanned and handsome face, and the mane of silver hair, stirred reminders of an earlier American presidency, one that, like Jimmy Carter's seemed to promise so much.

Later, Connally changed sides. He was Richard Nixon's Treasury Secretary in 1971 and 1972, and held a number of other top White House posts, including a few weeks as special adviser to the President, before quitting in the dark days of late 1974.

Ex-Democrat Connally is, like any good Republican, keen on business being given its head.



"Our only hope is to offer triple stamps for every run scored."

FLOAT POSTPONED? You may have decided that now is not the time to seek a public quotation for your company. You may still be anxious to pay off your overdraft or realise some of your shares for cash now.

Handwritten scribble at the bottom of the page.

Joyce 1350

FINANCIAL TIMES SURVEY

Tuesday May 10 1977

Mechanical Handling

A little-understood but vital and growing industry, mechanical handling is gearing up for a major export effort. This is partly because the domestic market is expected to remain sluggish, and a working party has been established which is looking into ways of improving export marketing to take advantage of world conditions.

LANSING BAGNALL-LANSING HENLEY

Rationalisation often benefits the companies directly involved.

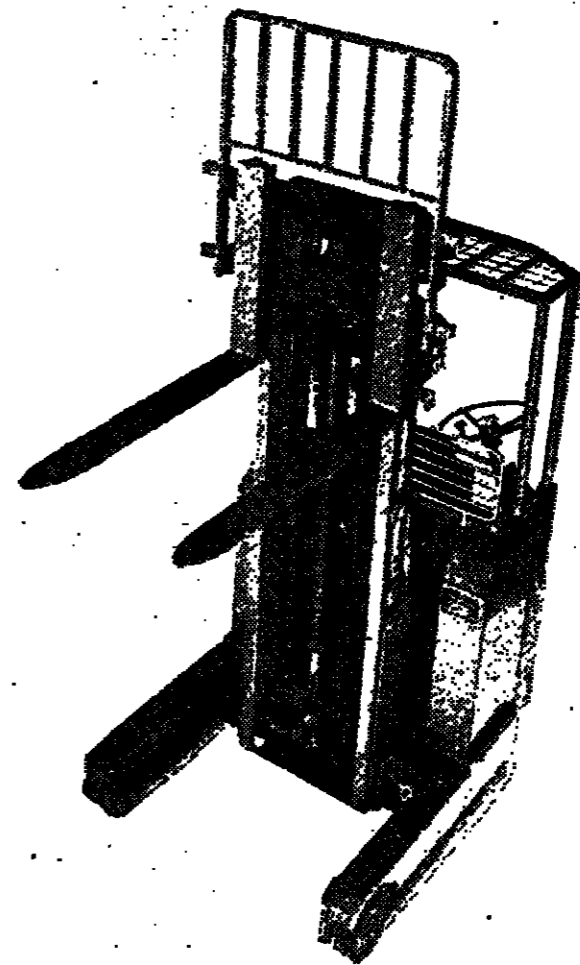
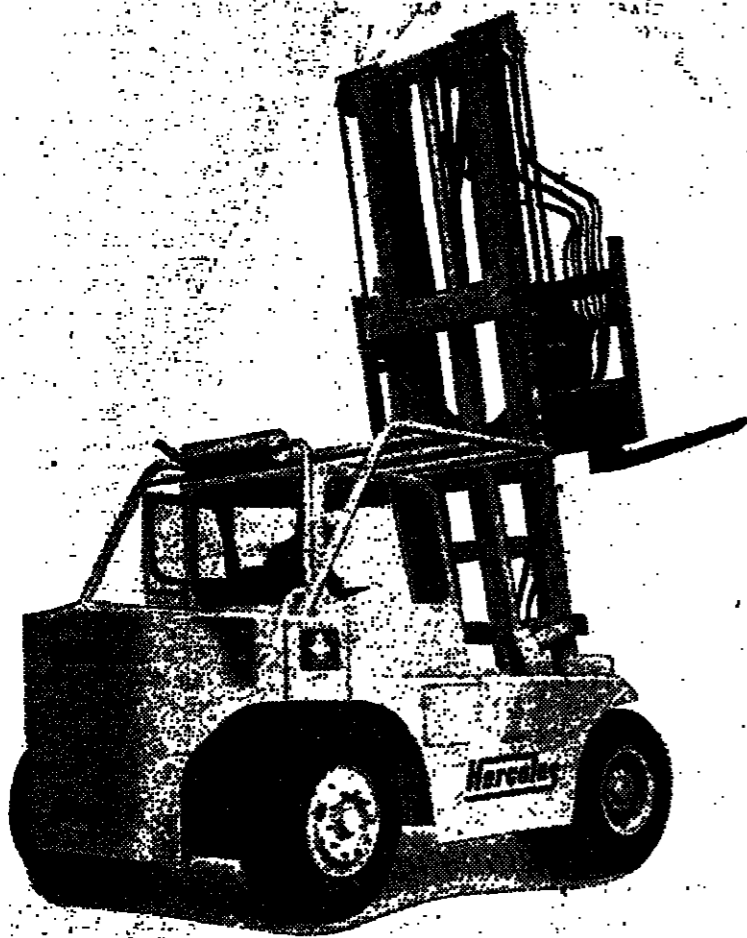
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The outstanding parts and service structure that Lansing Bagnall built up is now active across a wider range of truck types and capacities—to users who have not been able to benefit before.

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MECHANICAL HANDLING II

Gearing up for the export drive

THE ANNUAL cost of materials handling and storage in the U.K. is conservatively estimated to be £8bn. But in spite of this aspect of industrial life accounting for such a large part of the nation's resources, many companies do not know how much materials handling is costing them, let alone how they can make savings.

Even if increases in new orders are near the top end of the ranges indicated they would still be only a little higher than the level experienced in 1969-70. The main impetus to demand from overseas for the industry is likely to come from the U.S. as a result of the Carter Administration's action to lift the growth of the American economy, and from Japan.

The working party confirmed reports that demand for industrial trucks, particularly from overseas markets, has begun to pick up and is expected to continue to grow through 1977 and well into 1978. And fork-lift trucks provide a good indicator of industrial investment at large because they go into such a wide variety of manufacturing industries.

A Department of Industry study of 30 engineering companies completed last year seemed to show that in the engineering and allied industries alone around £90m. could be saved by improvements in storage and materials handling — even ignoring the other benefits arising from better materials flow.

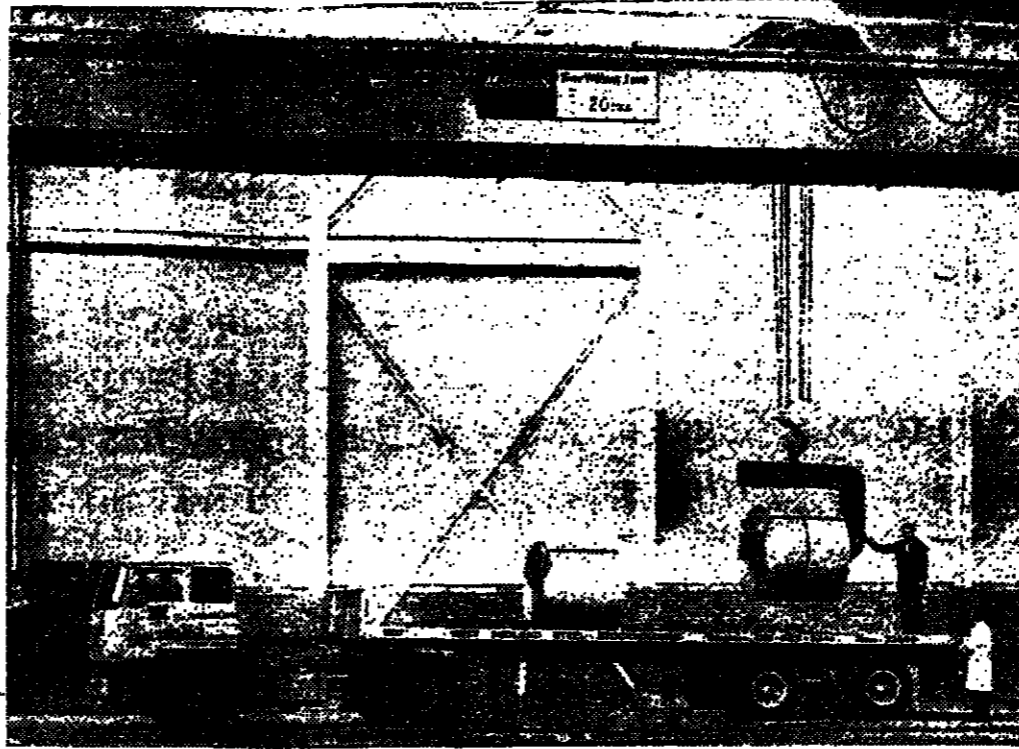
In the U.K., despite prospects of only a slow growth of gross domestic product in 1977 and anxiety about such things as inflation and profits, the working party looked for some increase in investment demand this year and next, particularly from manufacturing industry.

The latest Confederation of British Industry quarterly trends survey published last week revealed that confidence about the general business situation has not changed much in recent months and investment intentions remained very buoyant.

Demand

The increase in demand for mechanical engineering products should be spread widely across manufacturing industry. It particularly comes from export intensive industries such as engineering, transport equipment and chemicals.

Imports for the two years totalled £35.8m. and £38m. As for "other mechanical handling equipment," the favourable trade balance slipped last year to £26.6m. from £27.1m. Exports in 1975 were £71.1m. and imports £43.9m. while last year exports came to £83.4m. and imports to £56.8m.



Herbert Morris, who built this 20 ton floor controlled crane, owe a lot to their export achievements.

the mechanical handling working party points out that customers tend to regard technological developments in this sector conservatively and that new products are not readily accepted.

The working party agrees that all the various sectors within the mechanical handling industry will need to increase their overseas marketing activities if the home market fails to pick up sufficiently.

marketing, using consortia or trading houses, will be assessed," the review adds. The working party also intends to give further consideration to the desirability and feasibility of greater co-operation between manufacturers within the sector.

Benefits

As part of the working party's overall programme of work, factors expected to arise from restructuring will be studied. These would include such things as the benefits of scale, of extensive manufacturing facilities, of a broad product range and of wider coverage in potential export markets.

And, as an aid to identifying which export markets have the highest potential, a broad-based export marketing study will be undertaken. The aim of the study will be to provide recommendations on the action through which the export marketing of the industry can be improved.

It will also try to identify required customer services, including credit arrangements; foreign competitors' policies on pricing and services supplied; foreign competitors' marketing strengths and weaknesses and so on.

The strategy is concerned with switching the emphasis in certain key industrial sectors away from the concept that growth should be from a solid home base to one of export-led growth. And the review of the first year's work of the mechanical handling sector working party, soon to be published, concentrates very much on how the industry can improve its share of world trade by increasing exports and by import substitution.

It points out that while exports are increasing as a proportion of total sales, the industry has special problems in dealing with overseas markets. For instance, some manufacturers are too small to finance export marketing by themselves. Even the exporting manufacturers are often relatively small in terms of international competition.

Imports have continued to fall relative to total sales. The main categories of imports have been ancillary equipment associated with North Sea mechanical handling requirements, sub-assemblies and components imported by the British subsidiaries of international companies and specialist equipment not readily available in the domestic market.

Technology

Another factor emphasised by the industrial strategy programme is the need for U.K. manufacturers to incorporate higher technology into the value of structural changes in the approach to export

Kenneth Gooding Industrial Correspondent

Great changes make a great show greater!

- At the International Mechanical Handling Exhibition everything's in a much bigger way. The spread is wider. The depth is greater. And much has been added. The 1977 exhibition, at the National Exhibition Centre, Europe's most modern exhibition complex covers factory handling, trucks, construction machinery, bulk handling, storage, packaging, warehousing, waste handling, distribution, ports and terminals, plant maintenance, freight transport and containerisation.

- *Movement Forums Every morning the Federation of Association of Materials Handling Manufacturers are running sessions covering industrial trucks, mechanical engineers, storage, loading bays and lifting equipment.

Movement 77 logo with text: International Mechanical Handling Exhibition 16-21 May 1977 09.30-18.00 NATIONAL EXHIBITION CENTRE Birmingham. For further details contact Industrial and Trade Fairs Ltd., Radcliffe House, Blenheim Court, Solihull, West Midlands, B91 2BG. Telephone 021-705 6707. Telex 337073.

Putting it all on show

THERE ARE over 350 companies and organisations taking part in Movement 77, the International Mechanical Handling Exhibition which takes place at the National Exhibition Centre, Birmingham, from May 16 to 21. Visitors to the show will see comprehensive displays of industrial trucks, storage equipment, lifting gear, conveyors, unit load items, bulk handling and storage equipment, control systems, and a wide variety of components, ancillary equipment and information on a broad spectrum of handling services.

own battery, can leave the parent truck, at the mouth of an ISO container, travel to the back of the container, deposit its load, then return to the parent truck without the driver having to leave his seat. Control of the pallet truck is via an umbilical cord wound on to a powered drum. A joystick control gives all the usual movements.

An area of the industry which has shown recent signs of expansion is the reconditioning market. A display by Harvey Plant will be an old forklift truck which has been reconditioned on one half only. This will be prospective purchasers of secondhand trucks a clear idea of what is involved in a high standard reconditioning service.

Industrial trucks will, of course, be well represented at the Exhibition, and some innovations can be expected in this area, although once again most companies are keeping their latest developments secret until the opening day.

While much of the equipment to be shown will be appearing in public for the first time, since many manufacturers use the show to launch their new ranges, there is no word of any startling innovations that may be making their debut at the show. In fact, the only hint of something completely new is from SSI Fix Equipment, of Basingstoke, but this company, which makes multi-purpose storage and materials handling equipment refuses to pre-release any details.

Emphasis is expected to be on narrower working aisles and higher, more accurate stacking heights. Refinements are also expected in the increasingly popular 180 degree narrow aisle trucks, especially in automatic height selection and swivelling fork arrangements. New order pickers and innovations in picking techniques will also feature at the show.

According to Curtiss Instruments (U.K.) its market studies have revealed that the electric vehicle user has no way of test-

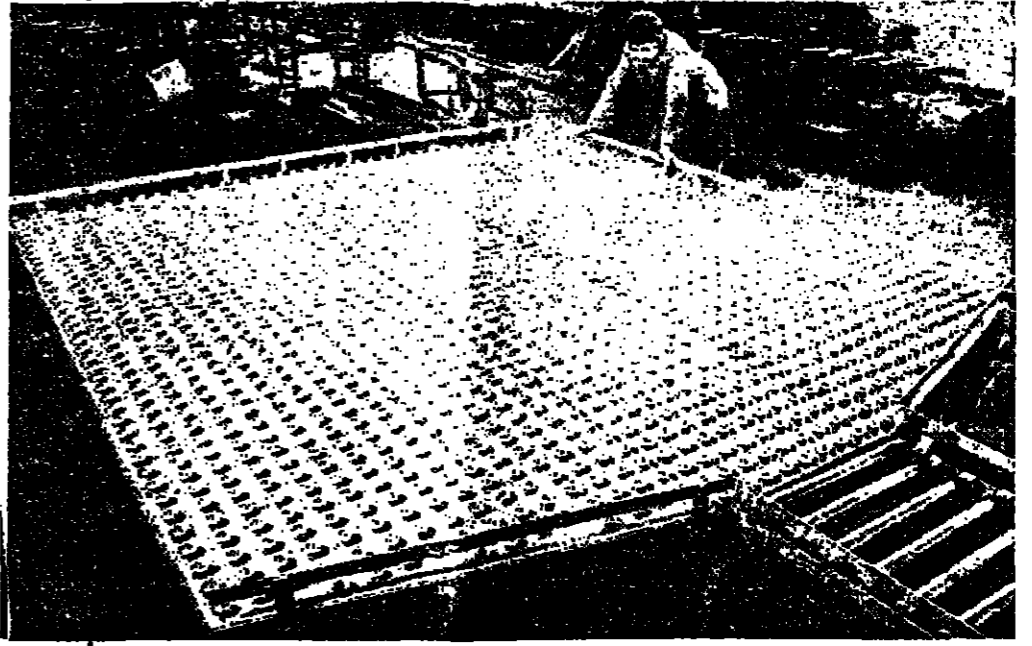
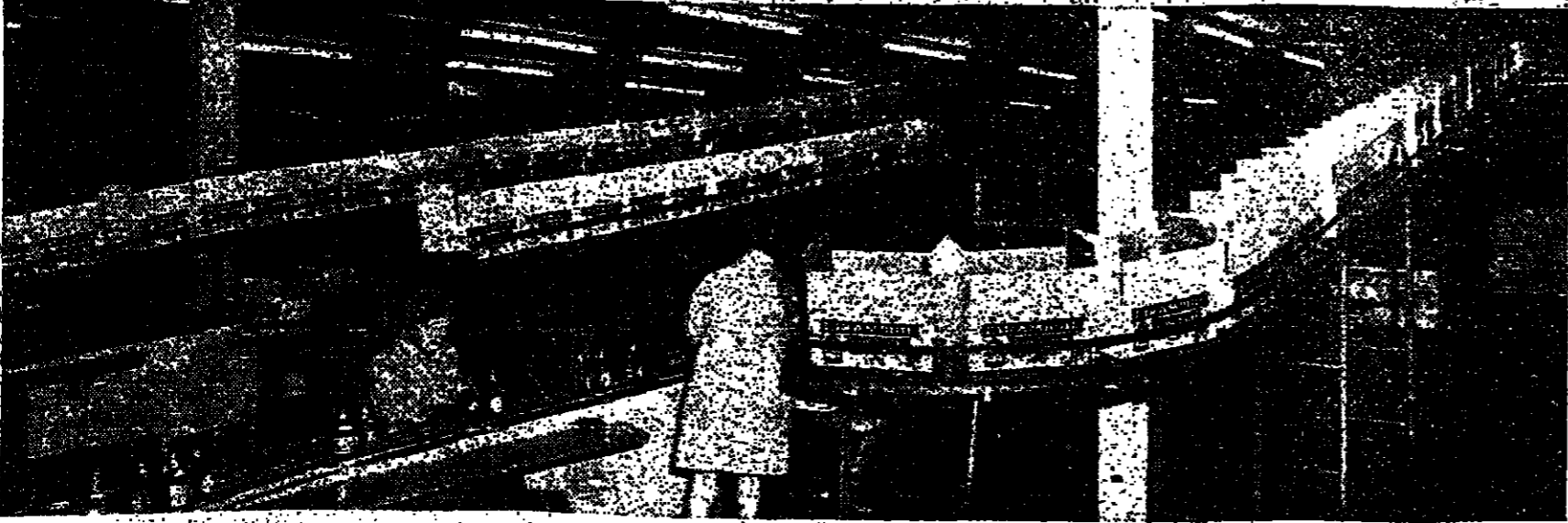
ing battery capacities under operating conditions other than with delicate laboratory instruments. These can normally only be provided, together with engineering supervision, by larger vehicle manufacturers. This company has therefore developed an instrument called the 1020 Power Prover, which offers the electric truck user robust instrumentation to test his traction batteries under actual working conditions. The company believes there is no similar instrumentation anywhere in the world at this time.

Tony France

Copy 1250

Joyce 1250

MECHANICAL HANDLING III



Two similar types of conveyor. Above, a Sover Marshall belt and roller system at Drembuie's Edinburgh blending and bottling plant, and right, a Metaltrac (Conveyors) multi-directional ball table, which, in this case, is used in conjunction with gravity rollers.

New roles for conveyor makers

OVER 200 companies employ some 16,000 people between more than that, as a result of which, in Britain's ports, only £2m in 1970, had conveyor and aerial ropeway to rise by 300 per cent. four years later to reach £8m, a business as early as 1927 and is one of the major British manufacturers, can talk of itself nowadays as 'not just marketing conveyors but looking for what is more of a turnkey project'.

Yet demand rose by even more than that, as a result of which, in Britain's ports, only £2m in 1970, had conveyor and aerial ropeway to rise by 300 per cent. four years later to reach £8m, a business as early as 1927 and is one of the major British manufacturers, can talk of itself nowadays as 'not just marketing conveyors but looking for what is more of a turnkey project'.

What this means is that, just as industry has become more aware of the importance of handling, so the larger handling equipment companies have become more conscious of the need to examine the totality of what they are trying to achieve with their products—to see the conveyor not merely as a means of moving items from one place to another but to look at what is happening before the goods are placed on the conveyor and at what happens after they are taken off it.

This concept of looking at the conveyor merely as an integral part of a treatment or production process, linking a variety of machines and specialist pieces of equipment which will be seen as a whole with the conveyor, was pioneered by Continental companies. Up till a few years ago they tended to be much more advanced than their British rivals in the

marketing of treatment lines or shipyard's panel lines—a series of machines linked by special equipment and machinery required and slot them into a whole package. To-day, such consultants still have a valuable role to play. But, in this ever more cost-conscious age, the engineering company is also, in effect, often taking on a consultancy role, bringing together equipment it does not make alongside that which it does and seeing the whole thing through in what is, indeed, a turnkey operation. The days when companies employed large teams of specialist engineers to buy different equipment are fading. Now they tend to want to turn to one company for the lot.

Steel from the mill must be cleaned and shotblasted and then dried and painted. Again starting from a single plate, at a shipyard may go through eight or nine stations before ending up as a large prefabricated unit for installation in position on the vessel being built.

What companies like Herbert Morris—which has just become part of the Davy International group after a protracted and at times bitter takeover battle also involving Babcock and Wilcox and Hawker Siddeley—and its Continental competitors are doing is selling all the equipment for a large credit package in the U.K. industry at least, this is the coming thing.

And it is also clearly paying off, with orders from the Soviet Union and the Far East and the strong possibility of future business in the Mediterranean among other areas.

Specialisation is the name of the game. The two sectors of the industry, unit load and bulk load, are becoming further apart as companies which at one time supplied the whole range of conveyors move out of those areas, especially standard conveyors, where a large number of the small companies can operate as efficiently and as cheaply into far from inconsiderable niches of the market.

This specialisation has of itself played a considerable part in bringing higher order books to the U.K. industry, but there are signs, too, that the changing character of the British economy has also helped to boost orders beyond what they would have been at a comparable stage in the industrial cycle a decade or so ago.

For what conveyor companies are finding is that the growing realisation of the higher costs of labour is bringing an upgrading of industry's mechanical handling requirements. There is a greater awareness of the need to introduce handling equipment that might have been seen as too sophisticated in the past.

Mr. Roy Stokes, of British Monoral, one of the principal British suppliers of handling equipment for warehouses, including monoral conveyors. The potential savings efficient handling can provide in terms of labour costs are increasing. And on top of that, as the industrial upturn begins its slow progress, there are already fears within some parts of the engineering industry in particular that labour shortages could develop, as in past periods of upturn, especially as far as skilled workers are concerned. So the need is to save employees for doing the jobs they are skilled at instead of forcing their involvement in a handling process which efficient machinery could largely cope with.

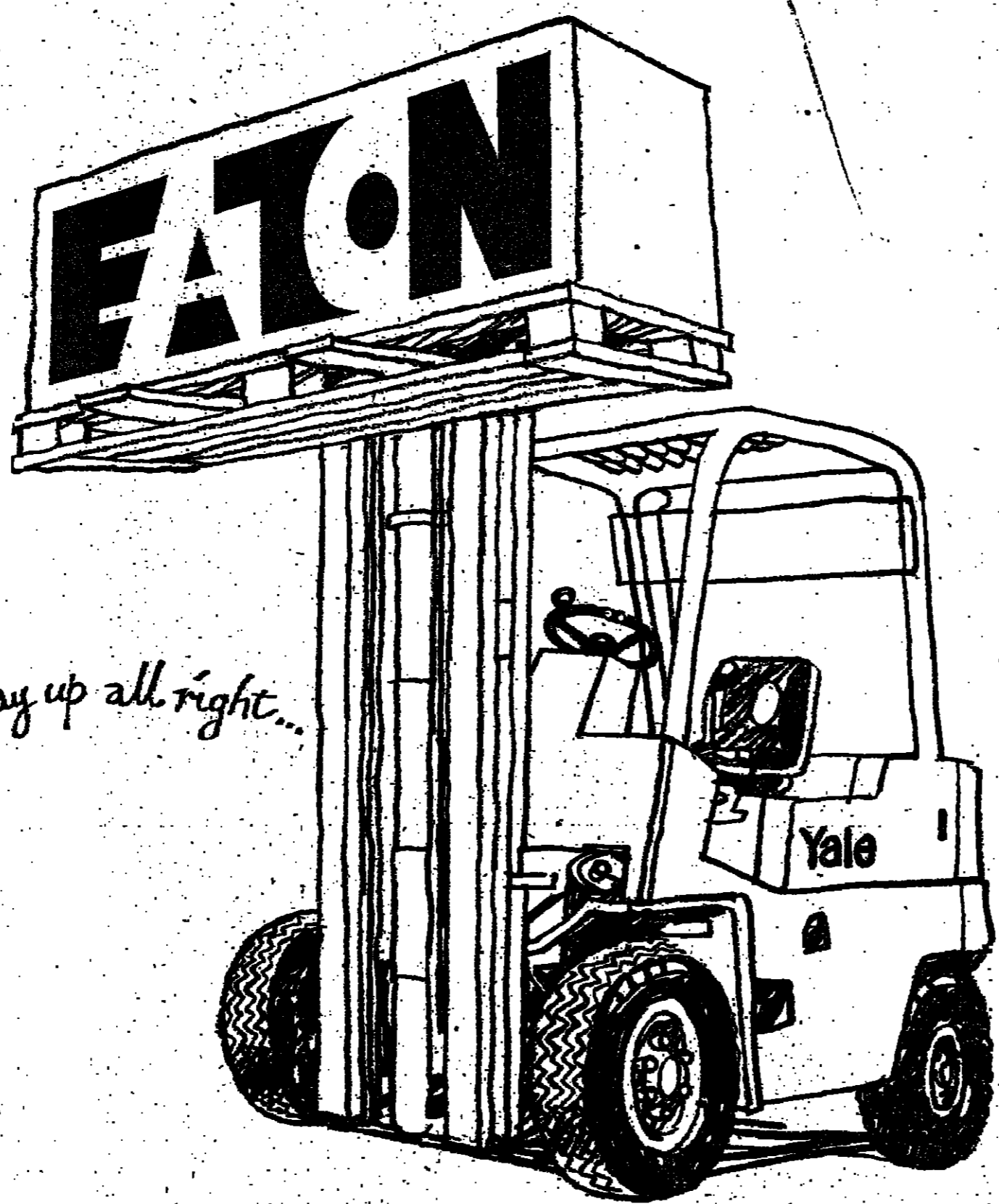
At the same time, overseas companies are looking more closely at the U.K. market: a recent entrant, for example, is Rapistan Lande. An amalgam of the Dutch Lande company and Rapistan, a U.S. conveying equipment group, this had a great deal of attention to overseas markets," says Mr. Stokes, Fenner which was severed earlier this year. Now it has set up new U.K. offices in Birmingham and is introducing a new range of standard equipment of products into this country, which it sees as having major marketing potential.

By a Correspondent

Categories

The industry's products fall naturally into two categories—unit load conveyors and bulk conveyors. The former are used for the movement of shaped loads with a flat base such as crates and packages and normally employ rollers to facilitate the movement of the belts. The technology used in their design is comparatively low, indeed heavy increases in demand are basically steel product fabricators using bought out components.

It is at the other end—the bulk load conveyor and the aerial ropeway used for long distance transport in, for example, simple mining and quarrying—that you come into a world of raw high technology with complex and designs often purpose built to provide a complete handling system for the specific customer—within British industry generally.



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MECHANICAL HANDLING IV

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Industrial truck market

DEMAND FOR industrial trucks is picking up again after the longest, hardest recessions the industry has experienced. So perhaps the market might soon become less of a buyers' paradise. Big discounts and fantastic financing deals have become a feature of the past two years. Some time ago the major companies latched on to financial marketing as a concept and began offering their own leasing and rental schemes to customers. To-day these schemes seem more attractive than ever but must be judged against the discounts and trade — in terms that an outright purchase involves.

How long will it take before the terms become less attractive? The industrial truck industry is now back to working a full five-day week and most companies have reduced stocks to reasonable levels after sustaining uncomfortably high ones for two years.

The improved outlook comes after a poor year for industrial truck sales. In 1976, estimated U.K. sales were down between 25 and 30 per cent. to around 20,000 units, indicating a fall back to 1972 levels after a 40 to 50 per cent. climb in 1973-74.

Mr. Ray Horrocks, general manager Europe and the Middle East for Eaton Materials Handling, the group whose Yale trucks account for around 15 per cent. of the U.K. market and is among the top three manufacturers in this country, believes the improvement in the



An example of dual application; this Hyster Karry Krane has the advantages of both crane and hoist, and is able to lift and transport most small loads.

British market will go on and total sales will continue to climb.

For a world view, we have the opinion of Mr. Bob Braun, a vice-president of Clark Equipment of the U.S., who is looking for total industrial truck deliveries to improve steadily through this year and by 1978 climb back to the peak achieved in 1974 when the U.S. took 83,000 units and Europe 96,000. Sales will not go above that level, however, Mr. Braun insists.

At the biggest of the U.K.-owned companies, Lancing Bagnall, joint managing director Mr. John Allenby reports that current order books are 75 per cent. up on the September 1975 level — at which stage they touched the bottom of the demand cycle.

And finally, there is the recently-published view of the short term trends working party of the mechanical engineering "Little Noddy" which declared: "Demand for industrial trucks, particularly from overseas markets, has already begun to pick up and it is expected to continue to expand through 1977 and well into 1978."

So the signs look better for the manufacturers. And they are certainly well past the phase where they had first to convince industrialists that they actually needed industrial trucks.

The truck makers are generally able to justify the cost of a truck by comparing it with the savings the purchase will bring. There can be major savings in man hours, in storage space and palletised loads are less likely to be damaged.

Industrial trucks can also speed up the movement of materials through production processes — and it is a fact of industrial life that productivity increases if materials and components are always available where they are wanted when they are wanted. Because savings can be quantified, it is not too hard a job to convince a Board of directors that the purchase, rental or leasing of an industrial truck or trucks is a good idea, even if the Board is watching cash flow and capital investment with more than usual interest.

For the customer, however, there can be some difficulty in choosing the best truck for the job at the best price. This involves much more than just checking price lists and asking what discounts are available. Service back-up and spares availability and cost come into the calculation with a machine that must keep working to earn its way.

The industrial truck market has always been very competitive and this is even more obvious to-day as the companies sense that sales are becoming easier to clinch and yet they

have nightmarish memories of the recent recession.

And it was during the recession that doubts arose again about the future of some of the local (that is, U.K.-owned) companies in the face of such furious competition from their international rivals. Three of the major U.S. groups actually manufacture trucks in the U.K. in a big way. They are Caterpillar, Eaton and Hyster. Although the fourth big American group, Clark, has now quit actually making trucks in England, it has strengthened its U.K. marketing and service operation by putting it in the hands of the Clarion Holdings group which is run by a Scot, Mr. Jim Bisset.

Competition from other countries comes in the form of trucks from West Germany, France and, of course, Japan, which has specialised in the production of the most popular sizes of machines and used mass production methods to get the price down.

But the U.K. industry is not unaware of the dangers of fragmentation. And it has begun a rationalisation process which in the past year has radically altered the shape of the British-owned part of the industry.

Merger

First there was the merger of Lancing Bagnall with Henley Forklift under the umbrella of Sir Emmanuel Kaye's Kaye Organisation to form what they claim is Europe's biggest industrial truck manufacturing group. Sales this year should reach around £100m. and profits must surely top the total of £5m. achieved by the two companies in their last financial years.

The addition of Henley to the Lancing Bagnall gives the concern a much stronger representation in the engine-powered truck market — engine-powered trucks are driven by diesel,

petrol or liquid petroleum gas and have around half the market, sharing it with electric trucks.

Coventry Climax, part of British Leyland's Special Products division, has provided the other nucleus for rationalisation. It first acquired the assets of Joshua Shaw, to add side-loaders to its range, and more recently took over most of the assets of Rubery Owen Conveyancer. CC paid £1m. for the Conveyancer assets and is to inject a further £7m. into the business before the end of this year. (Lancing Bagnall is reputed to have agreed to pay £5m. for Henley, with payments staggered over some years and related to the profits which might be achieved.)

Between them CC and Conveyancer should have sales of more than £55m. this year, against around £31m. for CC alone. CC's profit should be more than £3m. and Conveyancer is back in profit after a bad patch. There is consider-

able overlap in the product ranges but the deal does give CC entry for the first time to the heavier end of the business and takes it into the manufacture of rough terrain trucks, used more and more on construction sites. Lancing Bagnall would also like to get into the business and seems likely to buy its way in before too long.

In another deal, Ferruzzi actually moved into the business for the first time, but at the very heavy end. It has set up an engineering division which, among other things, is to manufacture straddle carriers for lifting containers under their bellies for Clark Equipment which will continue to be the world market.

The other U.K.-controlled concerns include Bussell Engineering, Cleco, Macdon, Montgomery Reid and Simons, Sims and Jefferies.

But perhaps the most interesting of the U.K. companies so far left out in the reshuffle is Lancer Boss. This company seems to have survived a bad financial patch. It expanded during the last-but-one recession but was not able to reap the benefits because, like so many other groups in the industry, it was kept short of components by key suppliers during the boom. Now the company is making profits again.

There is no doubt that both Coventry Climax and Lancing Bagnall were interested in a merger with Lancer Boss but it seems that that company's chairman and major shareholder, Mr. Neville Bowman Shaw, is reluctant to hand over the reins.

Rationalisation in the U.K. seems, in the short term at least, not likely to lead to much in the way of capacity cut-backs.

Nearly everyone in the industry agrees that there is over-capacity world-wide, as yet the major companies continue to build up their international capabilities. The view that there will be closures in the industry as then the capacity situation will be different. In the meantime, however, there are still large numbers of industrial trucks looking for customers.

K.G.

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Guide to corrective action

A REPORT was published recently by the Department of Industry which should go some way to convince management that, pound for pound, the return from new investment in improving materials handling is well worth while when compared with other investment opportunities.

From the research completed for the report it could be reasonably estimated that in the engineering and allied industries alone some £90m. a year could be saved by improvements in storage and materials handling. This was even after ignoring the other benefits arising from better materials flow.

Any company wishing to cost and re-assess its materials handling methods, and to take action on these costs, will find detailed guidance in the report, called "Materials-Handling Costs — a new look at manufacture." (HMSO, £2.10).

Research for the survey was conducted by the National Materials Handling Centre on behalf of the DOI's Committee for Materials Handling. This committee was set up in 1973 with the aim of promoting greater industrial awareness of the economic benefits of adopting better materials handling

management and technology. Work on this study of materials handling costs started in May 1974 when the committee set up a working party whose task was to obtain reliable data for the U.K. and to indicate the scope for reducing costs through better materials handling practices. (There was some other data available but this was mainly from the U.S. and a little from Denmark. The committee could not be certain that the cost estimates contained in that overseas data necessarily reflected the situation anywhere other than in the country of origin.)

The working party was formed with the co-operation of the Institute of Materials Handling, the Institute of Cost Management Accountants and the Institution of Production Engineers.

After some preparatory investigation, the working party recommended that a pilot study of materials handling costs in the U.K. industry should be put in hand. The study was to be restricted to engineering manufacture, taking a limited sample of companies chosen to be as representative as possible. In process, handling costs were to be specifically excluded. Some 30 companies agreed to

co-operate in the study, half with less and half with more than 400 employees. The concentration of effort on small companies was designed to establish whether their materials handling was less well organised than that of their larger counterparts.

Sensitive

The study showed that storage and materials handling cost, at the median value, was 12 per cent. of conversion cost (conversion cost being defined as the production cost minus all input materials costs). The amounts of money involved are considerable and, because storage and materials handling costs are sensitive to differences in technique and are more readily influenced than direct production costs, they represent an important potential source of cost reductions.

So, according to the study, materials handling appears to be costing many companies more than it ought. The most important single cause identified was "ad hoc" expansion in the absence of a strategic site-development plan.

The right cost level is usually achievable only through

careful design from the outset because once a system is operational changes involve cost or disruption," the study declares. "Nevertheless, it is still possible to achieve some reduction and it is estimated that this is true of about 30 per cent. of the companies observed."

From the sample survey there was little evidence to suggest that companies engaged in engineering production in the U.K. are aware of the true costs of storage and materials handling. This contrasts with the situation regarding inventory costs, which although somewhat lower, is considered important and monitored accordingly.

Although companies do currently isolate storage and handling costs, it would not be too great a burden for most of them to re-arrange the accounting techniques to enable this to be done, the study emphasises.

And it adds that "stock reduction planning and stock control are important factors in reducing storage costs, both in the short and in the long term. The study suggests a number of reasons why companies do not take action to reduce their materials handling costs. Three main ones identified were

CONTINUED ON NEXT PAGE

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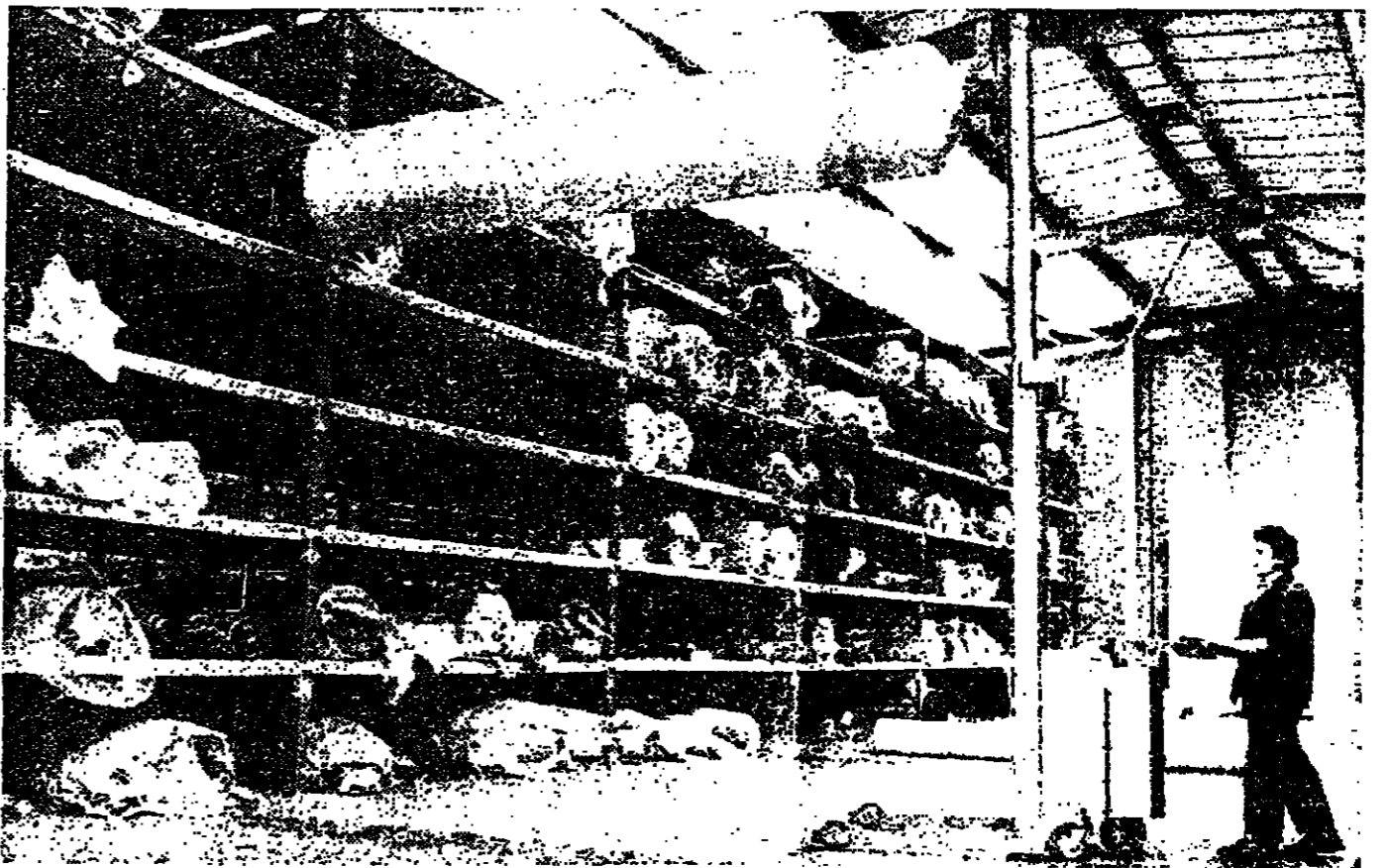


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Joy in 1975

MECHANICAL HANDLING V

Institute behind the industry



The Institute of Materials Handling is geared to help and give advice to both the large and the small companies under its umbrella.

HOWARD HICKS is a man who brings to the subject of materials handling all the ver- bal power and ebullience of a Welsh Hot Gopeller. At the end of this century there will be another 1bn. people on this planet. They will all want food, water and fuel. That means more will of manual workers by the top of what is shifted now. So materials handling must be treated in a much more scientific way. We must become more efficient. If we don't, then we must accept that our standards of living will fall.

Mr. Hicks insists that a better approach would not involve any massive capital investment. Only individuals can join the programmes or a switch to the very highest of technology. A more efficient use of techniques already at our finger tips is all that is required. He produces a vivid example. "Some 50 per cent. of the Indian rice crop is lost through bad storage. If the Sured it the right way they could double the quantity of food available. Add the methods required are, to Western eyes, old-fashioned."

To encourage and advance the study of techniques of materials handling in all its aspects.

To stimulate and promote re- end of this century there will be another 1bn. people on this planet. They will all want food, water and fuel. That means more will of manual workers by the top of what is shifted now. So materials handling must be treated in a much more scientific way. We must become more efficient. If we don't, then we must accept that our standards of living will fall.

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Mr. Hicks recalls that throughout the nine years with that company he grew more and more frustrated at the frightening inefficiency within the building industry. This, in his opinion, resulted from the fragmented organisation and wide division of responsibility, with designers and builders being diametrically opposed in philosophy and more concerned with scoring over each other than understanding their relative activities.

Secondly, management: effective planning, control, review and improvement of the physical aspects and the associated management information.

Thirdly, technology: the techniques required to meet physical and management aspects.

It insists that better materials handling can result in such things as "reductions in cost of handling; savings in space; minimising stocks by improved stock control; reducing waste from damage in handling or improper storing; up-grading scrap through selective handling; reducing human labour and improving density; making work more interesting and effective; reducing fatigue; making work safer; increasing productive capacity; smoothing out work flow; improving distribution and routing; improving location and layout of storage facilities; increasing efficiency of receiving and despatching."

Mr. Travers Cosgrove, the national chairman of the Institute, says: "We confidently expect that application of our first president's acknowledged zeal and experience to the affairs of the Institute will enable it to grow in size and influence."

And this is certainly Mr. Hicks' aim. "The Institute must get more people more involved in knowing what materials handling is all about. All the essential things in life—energy, food, and so on—are touched by it. And it is one area of the economy where there is considerable scope for improvement and savings."

"The Institute must increase its membership. There are vast numbers of people involved in materials handling and no other science. They should be in the Institute and be helping to improve materials handling methods."

Responsibility

Neither party was really legally or financially responsible to the client, and time and time again it evolved that the client was the whipping boy, often having to take overall control of the many activities involved.

In 1957 Mr. Hicks decided to create his own organisation which pioneered design, construction and management responsibilities as a fully integrated service in the U.K. This formation of the IDC group met with bitter criticisms from some of the professional bodies. But he has stuck to his guns and the IDC group has grown from a staff of three and a turnover of £250,000 in the first year to an organisation with nearly 1,500 employees and a £30m. turnover.

The institute has also grown to appreciate the need for an integrated "systems approach" to any materials handling problem and thought it very appropriate to have as its first president a man who had applied this principle so successfully.

The institute maintains that to-day the term "materials handling" is accepted as one covering three elements: Firstly, physical: the movement, handling and storage of materials into, through and

Celebration

On May 19 Mr. Hicks takes over as the first president of the Institute of Materials Handling. It is celebrating its 15th Anniversary this year.

The Institute was first formed at a meeting at the St. Ermins Hotel in London on April 17, 1952, and during its first quarter-century has worked to get materials handling accepted as a discipline which rationalises the movement of materials with economy and safety.

The objects for which it was established are:

To promote the science of materials handling and to further the knowledge and appreciation of that science among the public generally;

To encourage and advance the study of techniques of materials handling in all its aspects.

To stimulate and promote re- end of this century there will be another 1bn. people on this planet. They will all want food, water and fuel. That means more will of manual workers by the top of what is shifted now. So materials handling must be treated in a much more scientific way. We must become more efficient. If we don't, then we must accept that our standards of living will fall.

Mr. Hicks insists that a better approach would not involve any massive capital investment. Only individuals can join the programmes or a switch to the very highest of technology. A more efficient use of techniques already at our finger tips is all that is required. He produces a vivid example. "Some 50 per cent. of the Indian rice crop is lost through bad storage. If the Sured it the right way they could double the quantity of food available. Add the methods required are, to Western eyes, old-fashioned."

Guide

CONTINUED FROM PREVIOUS PAGE

(a) lack of awareness of the costs of materials handling and the factors which contribute to them.

(b) organisation weaknesses, including the absence of programmes for training and developing staff in the use of systems design and materials handling techniques.

(c) the lack of a strategic plan for site and method development, including financial planning.

Any programme for corrective action by a company must take account of these three points," the study maintains. It gives industrialists an insight into how to identify the more obvious symptoms of high materials handling costs.

The main reasons for high cost are:

Poor layout planning. The consequences here are long and frequently complicated movements.

Poor space utilisation. Partly a product of poor layout planning. But poor use of

space in work-in-progress storage areas is also an important factor, as is space utilisation in stores.

High labour costs. These spring directly from poor layout planning, complex movement and shortage of handling equipment. Over-decentralisation of stores leads to small inefficient units.

Under-investment in equipment. The study showed only a small proportion of total costs could be ascribed to investment in materials-handling equipment and that in the sample no use was being made of modern storage and handling techniques.

Many of the companies surveyed were making do with equipment that was old, poorly maintained or badly utilised.

The survey also revealed a lack of awareness of costs. Not one of the companies knew exactly what its material handling costs were. "This ignorance of costs and of the function to staff already carry-

potential savings is the main constraint on the development of cost-effective materials-handling systems," the survey insists. It contains a special section on how industrialists can carry out a cost audit.

Conclusions

As mentioned previously, another of the main conclusions was that many of the companies had higher materials-handling costs than necessary and that the most important single cause was ad hoc expansion in the absence of a strategic site development plan.

"If the development of handling techniques is not to be constrained by past decisions, and if best use is to be made of the site, a development plan is essential," the paper declares.

Of the 30 companies visited, seven had appointed staff specifically to deal with the storage and materials handling function and 11 had allotted this

ing other responsibilities. In 12 companies it was not possible to identify anyone with formal responsibility for the function.

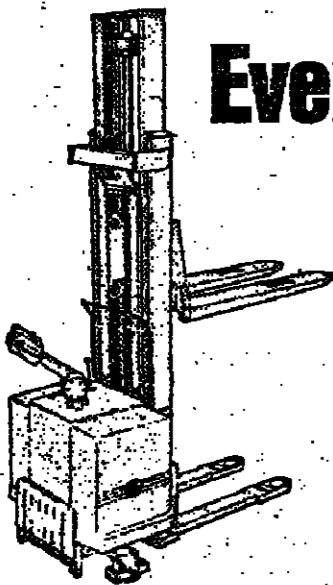
In many of the companies surveyed the role of the materials-handling specialist was solely to carry out studies at the request of the production departments, and to advise on methods and equipment. He was not in a position to initiate overall factory reorganisation, nor did he have responsibility for materials-handling costs. In many cases the specialist staff had no formal training in materials-handling techniques.

The paper insists that there is, therefore, obviously a need to train and develop staff to meet the more demanding requirements of materials-handling systems design. And there is the need to place the staff in the correct organisational relationship with other members of the company to enable them to carry out their work.

K.G.



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FT3

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Hoists need a healthy export drive

HOISTS, BE they hand or electrically operated, are something of a Cinderella as far as the materials handling scene is concerned. They have certainly been around a long, long time—or at least the hand-operated types have—and are low-cost items so they tend to be unglamorous products, often manufactured just as a sideline by cranes makers.

However, some fresh light was thrown on this little-discussed corner of the mechanical engineering sector recently during the battle for control of Herbert Morris, the Loughborough crane makers.

It turned out that the Department of Industry was taking an interest in the future of Morris mainly because of its position as the U.K.'s major supplier of hoists.

In recent years Morris has been active in developing its hoist operations and is responsible for about three-quarters of British output. As this is a field in which imports have taken a large share of the U.K. market, the Department has been watching carefully the outcome of the various bids for the group.

That situation attracted two Monopolies Commission reports and the first one explained the position in these terms.

"The Department of Industry considered Morris to be one of the leading companies in the country's overhead crane and hoist industry with, in recent years, an above-average performance. The Department were concerned to establish a stronger British hoist industry so reducing the present level of hoist imports. The Department would not wish to imply that a take-over by a larger group would necessarily be detrimental to either the industry or Morris. However, the Department sought assurances that employment opportunities, growth and Morris's contribution to the balance of

trade would not be reduced in the event of a take-over."

The hoist industry is, of course, much smaller than the crane business to which it is so closely related. The products are hand-operated chain hoists or "blocks" and lever pull hoists, and electrically operated wire rope or chain hoists.

Hand operated hoists are installed where use is infrequent and may have a lifting power of as much as 20 tons. Cranes frequently incorporate hoists, for example where a crane has a self-contained lifting device on a runway.

It is therefore not easy to isolate figures relating to hoists. In 1974 the U.K. hoist industry had sales to third parties of the order of £5m. and this probably has not increased very substantially in view of the recession.

Morris gave the Monopolies Commission in mid-1976 these estimates of the market and of its own percentage share of both U.K.-made and imported products.

Exports for the same period increased from £8m. to £17m. or 112 per cent. while imports showed a similar increase from £6m. to £14m. or 132 per cent.

There are about 50 companies employing about 4,000 people which make up the U.K. lifting and winding business. But most of them modify or assemble imported hoists.

Apart from Morris, the other two major U.K.-owned manufacturers are the Clayton Crane and Hoist Company, which is part of the Porter Chadburn group, and Marrison, a subsidiary of Williams Hudson.

The National Economic Development Council's "Little Noddy" for the mechanical handling industry also lists Clarke Chapman, Stothert and Pitt, Boughton and Son, Felco, and George King as significant companies in the industry.

The sector faces increases in imports of completed and part-completed equipment with competition from Japan, Germany and Bulgaria where manufacture is based on high-volume, mass-production methods.

One prominent West German company—Demag, which is part of the Mannesmann group of engineering companies—has set up a manufacturing operation at Banbury, in the U.K. for its overhead travelling cranes and at the same time probably provides Morris with its main competition in the market for hoists of various types.

Mr. Bob Jones, general manager of Morris's Light Products division, insists that this is a growth market.

He says the Health and Safety at Work legislation has concentrated employees' minds on what they should and should not be doing in the way of lifting heavy weights. So hand-operated hoists are required in more locations than ever before.

It is not only the U.K. which

offers growth. As far as the hand operated hoists are concerned, Morris is now exporting about half of its output. Like so many other U.K. engineering companies, its strongest traditional markets are the old Commonwealth countries. But the group is now getting more and more into Europe and is about to enter the vast U.S. market.

One of the arguments Morris had against the bid by Babcock and Wilcox (the one eventually defeated by an agreed offer from Davy International) was that Babcock would kill at birth Morris's plans for the U.S.

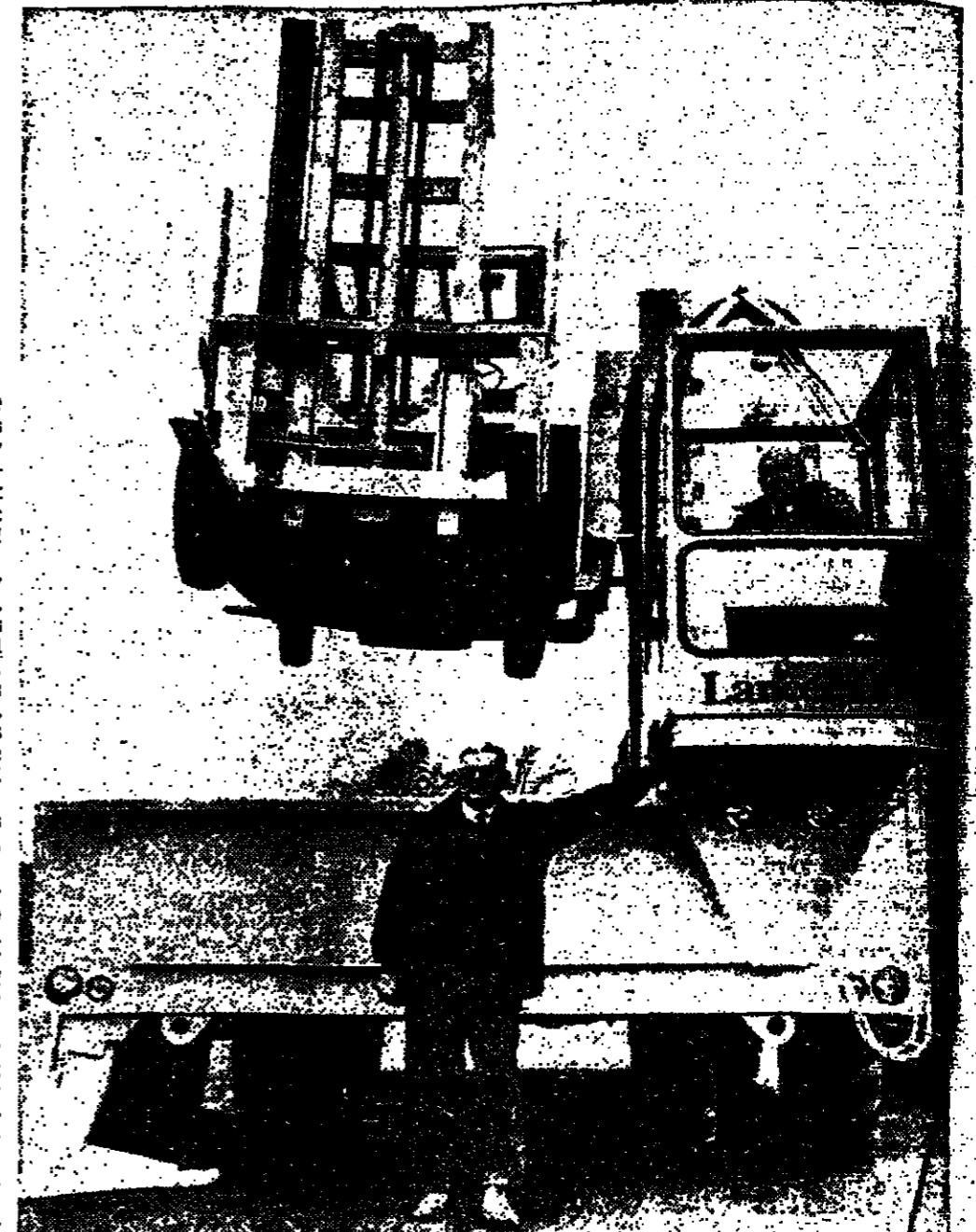
About 100 companies are nominally manufacturing lifts and escalators but many employ as few as 20 people. Total employment in the industry is put by the National Economic Development Office at around 14,000 people.

The sector is dominated by the Otis Elevator Company, an American-owned business which is part of the U.S. United Technologies conglomerate. Other important companies include Express Lift Company, one of the many subsidiaries of the British General Electric combine, and Marrayt and Scott.

Competition in world markets comes mainly from the U.S., West Germany and Italy.

Currently the industry, whose fortunes are strongly tied to building activity, is in a depressed state and orders for new equipment at the end of 1976 were 50 per cent. below the December 1975 level.

Home sales are expected to contract drastically in the next two or three years and recovery is dependent on the construction industry. Import penetration will be reduced, however, as always happens during a deep recession, and it will be essential for U.K.-based companies to increase exports substantially to survive.



Two of the vehicles built by Lancer Boss, which claims to make the widest range of lift trucks in the world.

K.G.

Containers are still a boom industry

THE UNIT load concept, which was virtually unheard of just ten years ago, has blossomed to such an extent that container and trailer services now dominate the world's main general cargo handling routes.

Containerisation, first introduced on the North Atlantic run between the U.S. and Europe in 1966 continues to go from strength to strength as demonstrated by the fact that several major trade routes are due to switch to "boxes" this year.

As a result general cargo ships are becoming almost obsolete and are tending to be used solely in the areas where there is insufficient trade to warrant the considerable capital expenditure entailed in containerisation.

Advantages to shippers stemming from containerisation include fast regular services using swift modern purpose-built containerships and highly automated terminal facilities which ensure quick turn-round times in port. Co-ordinated rail or road services allow a door to door service and damage and pilferage in transit is greatly reduced by the increased security afforded by sealed containers.

And the advantages of containerisation are not denied to shippers of small consignments of goods. For example, two of the main container consortia—Overseas Containers and Atlantic Container Line—have formed Containerbases Ltd. which manages a chain of purpose-built inland clearance depots offering groupage facilities—that is consolidating export goods into container loads.

Just this month Brown Jenkinson, leading shipping agents, announced that after studying the growth of ro-ro traffic to the Red Sea during the past 12 months, it felt that containerised operations were now "highly suitable for this area."

This coincided with news that new container services between the U.K. and Red Sea ports were planned by the Scandinavian Middle East Line and Saudi Orient Maritime, the Saudi flag shipping line.

Last month P & O Strath-Ellerman and the United Arab Shipping Company set up the Arabian Peninsula Container Line which is now operating four fully cellular container ships between Liverpool and the ports of Dubai, Muscat, Dammam,

Bahrain, Doha, and Abu Dhabi. Thus trade between Europe and the Middle East is gradually following the trail blazed in the North Atlantic, in the Transatlantic and the Europe-Far East Trade where virtually all the general cargo trade is handled by the big container consortia.

Other new trades going over to containers this year include U.K.-New Zealand, scheduled to begin next month, and the Europe-South Africa services which begin at the end of September.

But the spread of containerisation is also beginning to change some of the traditional world trade routes. In some areas where sea haulage was once maximised to hold down freight costs, new overland container routes have become cost competitive choices or, in some instances, competitive because of major time savings.

As a result ports of the American East and Gulf coasts have lost a lot of their traditional trans-Pacific trade, which would in the past have been routed through the Panama Canal. Railways now carry more than half of the trans-Pacific cargoes from West to East coast ports.

A broadly similar pattern is emerging in the Far East where

the Trans-Siberian Railway is winning an increasing share of container traffic between Europe and Japan. Here, however, the competing shipping lines claim that the State-owned Trans-Siberian Railway is quoting artificially low prices.

The cost of containerising the U.K. main trade routes includes the acquisition of specialised vessels, new berths, container handling equipment and inland depots has probably been well in excess of £1bn.

But after taking the plunge into containers in a big way, Britain's main consortia are beginning to see a healthy return on their investment. OCL, for instance has just turned in pre-tax profits of more than £42.55m. for its owners—Ocean Transport and Trading, P & O, British and Commonwealth and Furness Withy.

The undoubted success story of the container concept has just been demonstrated—just how advanced technology gives sufficient financial backing can transform an industry. But a biological innovations not every body benefits. This progress was largely at the expense of the dockers who, in the course of the past 10 years, have seen their numbers more than halve to 29,200.

Roy Rogers
Shipping Correspondent

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- ITT - Kellogg's Company - Kodak
- Lloyds Bank - Mersey Docks
- Montague Meyer - Perkins Engines
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by 10 1:50

MECHANICAL HANDLING VII

Training gathers new impetus

ONE time the most sophisticated pieces of equipment used in the series of pay demands for a dock worker was ever extra skills. A number of the major companies like British Leyland and Reed International have already had training, tests and certificates schemes, and will now be changing the face of the industry with these even more sophisticated and safety oriented schemes.

A national scheme could help employers speed the process of interviewing and choosing job applicants and help them adapt to new cargo handling techniques. But others outside of the major companies will be less willing to suit their particular requirements to spend either the money on sophisticated training schemes.

Mr. Ronnie Hearn, RoSPA Training Director, said that the use of the National Board of the National Board (NDLB) report could be published by the end of the year. Since the 1990s Port of Britain has had to about the spread of industrial accidents which cost the country up to £200 million a year in damages and compensation and the cost of accidents to industry ranging from individual companies to the straddle-carries stressed in the RoSPA report.

The working parties will study the guidelines on forklift truck training contained in a report now Road Transport Industry Training Board (RTIB) report which is already used by a number of companies as a training manual. The RTIB has been invited to join the study groups of the various industry training boards operating in other interested industry training boards.

A recent Institute of Materials Handling inquiry into forklift safety and training supported the RTIB findings and applauded the call for a national system of training and certificates. It drew particular attention to the need for strict medical examination before workers are allowed to use potentially dangerous pieces of equipment.

RoSPA says: "In 1975 there were 14,558 accidents involving industrial trucks, of which 48 proved fatal. While the toll in terms of human life and suffering resulting from this sort of accident has fallen in recent years, it is still unacceptably high."

Most industries involved with mechanical handling already operate training schemes but requirements of the training boards vary. The National Federation of Building Trades Employers has drawn up its own report into the problems of handling forklifts over rough ground. The report stressed the importance of selection, choosing the right man to employ, and the necessity of strict training before individuals are allowed to use potentially dangerous pieces of equipment.

The building industry, through the Construction Industry Training Board, has its own training school at Bircham Newton. Workers are instructed in the use of equipment ranging from forklifts to sophisticated earth-moving machinery and cranes.

Major employers like Wimpey and Lening also have their own training schemes, to supplement the industry instructors, and training here is usually very strict.

The effects of the mechanical handling revolution on changing working patterns is best illustrated in the docks industry. Containerisation has completely changed the traditional face of Britain's ports. From a highly labour-intensive operation the industry has drastically cut its workforce as bigger and bigger machines have taken over jobs previously handled in the strictest sense of the word—by hundreds of dockers.

The industry has always been conscious of the potentially high risk to which its labour force is exposed. These have increased with containerisation, although the number of individual accidents has been reduced as the labour force has been cut. Mr. Mike Compton, a Port of London Authority Safety Officer, said: "When a 30-ton containerised load can be handled in a single lift, the danger of a serious accident will be increased."

PLA dockers are trained to operate a wide range of handling equipment at the NDLB training centre at Saundersness Road on the Isle of Dogs adjacent to the India Millwall Docks. In some cases it is impossible to carry out training at Saundersness Road—for instance, it would be difficult to provide adequate, and expensive, on-site training for monster pieces of equipment like the PACECO container crane. In these cases NDLB instructors will provide training on the berth itself.

The scheme is comprehensive—it has to be, with PLA dockers alone operating 25 different pieces of mechanical handling equipment. The PLA's own instructors assist with training when the work load gets too heavy. The widely differing pieces of equipment present complex problems for the operators. For example, straddle-carrier operators have to overcome the problem of a "blind spot"—when fully loaded the driver does not have full vision from his cab. To overcome this difficulty some employers have installed a radio link to the driver's cab and the whole operation is controlled from a central control tower—a smaller version of the system used on airfields.

With equipment like straddle-carriers the layout of the berth is equally as important as the training of the operator. Mike Compton says: "The old concept of an open berth, with hundreds of dockers roaming around the quayside, unloading directly from the ship into a nearby storage warehouse, and with lorries coming right up to the unloading area to pick up cargo, has completely changed. With containerisation the berths have been redesigned to provide large open spaces with no sheds and warehouse and the numbers of workers and people coming on to the berth are strictly controlled."

Andrew Taylor

Choice of equipment is equally as important as the design of fixtures on the berth. Much of dock handling equipment is virtually custom-built and Mike Compton is involved in choosing the right design of equipment to suit individual berths needs.

The unions too are involved closely in safety and training in the ports. Safety committees abound throughout in the industry and since 1934 each dock has been required by law to operate its own ambulance service unless there is already such a service within a few miles of the dock.

The Health and Safety at Work Act has provided the impetus for a number of other sectors to adopt schemes like those operated in the docks and mines for many years. Organisations like RoSPA and BITA and the other industry training boards are following up this impetus in an effort to ensure the guidelines laid down in the Act are implemented.

While this is an extension of the idea of mechanical handling, the abilities of robots to solve difficult transfer problems where parts—which can be extremely hot and heavy—have to be moved through complex paths and precisely placed, are worth examining. They can frequently replace complex conveyor layouts, combined with secondary manipulation.

Robot technology comes under the general heading of machine intelligence—a subject on which IBM among others has been expending a great deal of time and effort. Work at IBM goes a great deal beyond robotics since it is looking at ways of teaching robots to recognise workpieces and whether they are in the right position for presentation to the device being assembled. This apparently simple procedure is probably one of the more difficult to reduce to a stream of computer instructions and a large amount of programming expertise is being devoted to the production of general solutions applicable to any handling/assembly problem.

In Britain, Edinburgh University's Machine Intelligence Unit, under contract to NEL, is seeking a method of teaching a computerised robot to "see" so that it can be given such jobs as inspecting engineering parts when loading from one machine to another. Considerable progress has already been made, particularly in using computer-controlled TV as a means of recognition and pattern-matching.

This area of computer applications is one of the most exciting with incalculable consequences for the manufacturing operations of the not too distant future.

It is not surprising that micro-computers and programmable devices are being used in large numbers to provide the brains for robots built by such groups as Unimate and ASEA. What is surprising is the fact that the Japanese and Italian car industries have been

Ted Schoeters

Big opportunities for computers

CAUTIONARY tale was told recently about the pitfalls of investing micro-computers in industrial processes—in this instance a somewhat specialised form of mechanical handling which involved a fully automated plant for the processing of final destruction by thermal means of a large stock of military missiles.

The method used to design it had to be a completely safe controller was lengthy to say the least clumsy and a year to complete. Though powerful units were in the line and the two processors for the basic approach to problem were not really

stuck to their schedule since was not absolutely certain in the more powerful units became available. One of the main problems was the computers were tired to run both the actual firing of the chemicals, pumps and relays to the generators, and the full supervision of the whole system for a year.

was decided to operate the units in parallel, sharing various functions, and the writing of the programs for was basically a simple process of events took two weeks. Even when the equipment was being installed, there was a slight hiccup, since an electrician saw fit to feed 110 to the micros.

One who still believes in the micro solution holds all answers and is simple to use will undoubtedly have a wake-up call. The same time the advantage of incorporating these into controllers are such they quickly repay all the put into them. One of the applications of the multi-processor Micro Flex 3 from for instance, will be in memory providing control in the Mainline pipeline runs from South Wales to a variety of petroleum products distribution depots in

Used by Esso, Gulf and Texaco, the line's facilities are being extended to meet the needs of Amoco. The £265,000 worth of Serck equipment will include micro-driven master stations and out-stations.

Programmable electronic controls, also to go on a pipeline, but this time an 800 km gas line in the USSR, form a large part of a £2m contract won by Ultra Electronics from the Coborrow Consortium (Cooper Bessemer, Rolls-Royce and Willbros). They will supervise the operation of 42 gas turbine/compressor sets which will pump the gas along the line.

These programmables are appearing in many of the toughest situations, partly because maintenance can be reduced to a printed circuit board and partly because they are so compact and require little power. ASEA recently announced completion of commissioning on a cement handling plant controller, based on one of its Promatic units in New Zealand.

Replacing electromechanical relays and discrete electronics, the device takes its instructions from an erasable programmable read-only memory to handle the work of filling six huge silos from incoming ships. In turn the silos feed the product to a bagging plant, or to bulk hoppers required to supply road and rail vehicles. There are a total of 107 input signals from the hopper control valves and the air slides which lead to the cement to the required destination and 111 output control signals and the whole electronics fits into a cubicle about the size of a coat cupboard.

One aspect of micro-processor or programmable control is that it allows large plant to be automated stepwise much more easily than a fully centralised control system based on a powerful controller which is more likely than not to be a micro-computer at the present moment. This method of installation also causes far less interruption of operations.

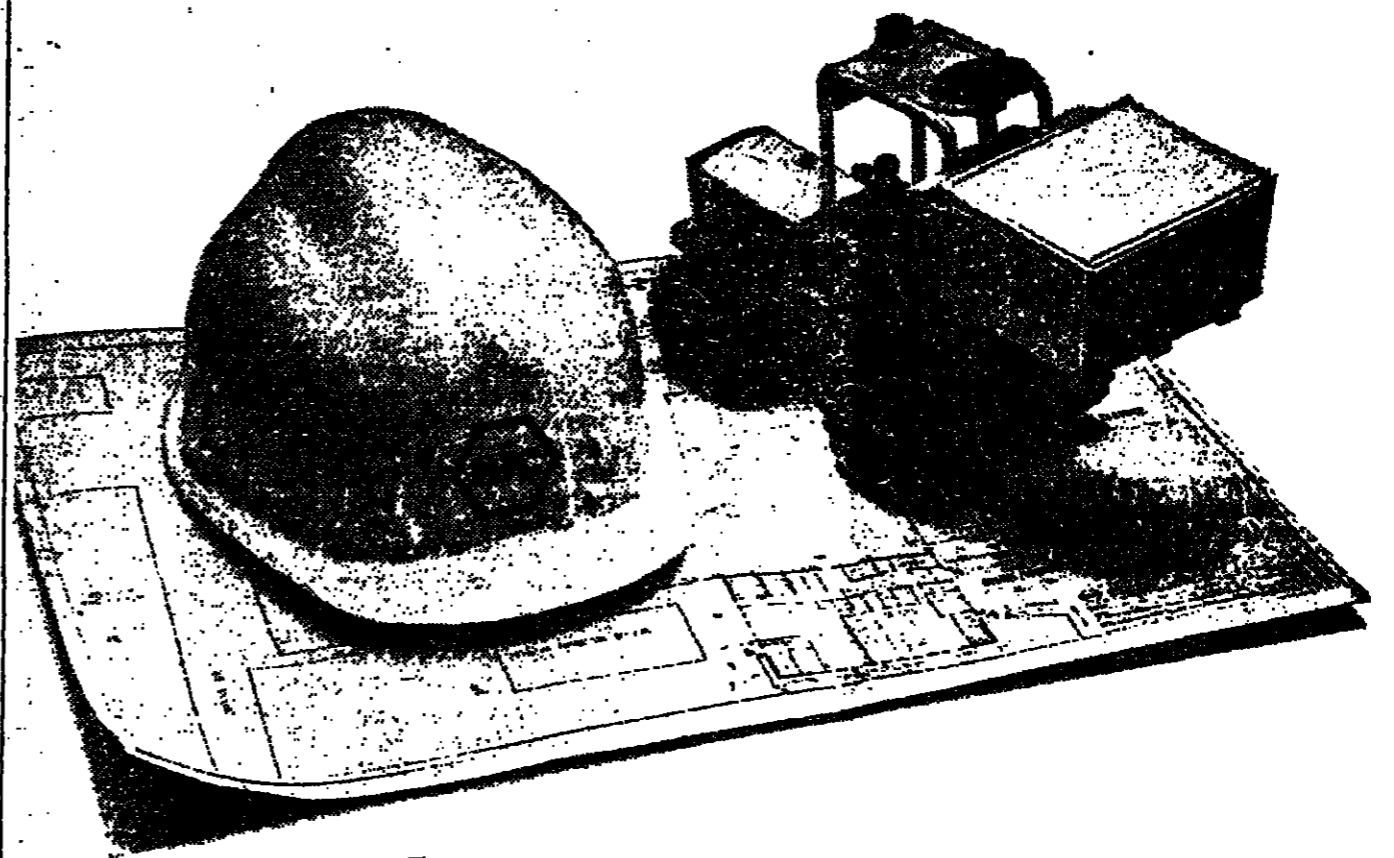
Some control equipment Italian car industries have been

still industry representatives RoSPA has invited representatives from the ports, automotive, warehousing and other industrial trucks, of which 48 TUC has also been asked to take part in the study but fear that the introduction of "certificates of handling forklifts over rough

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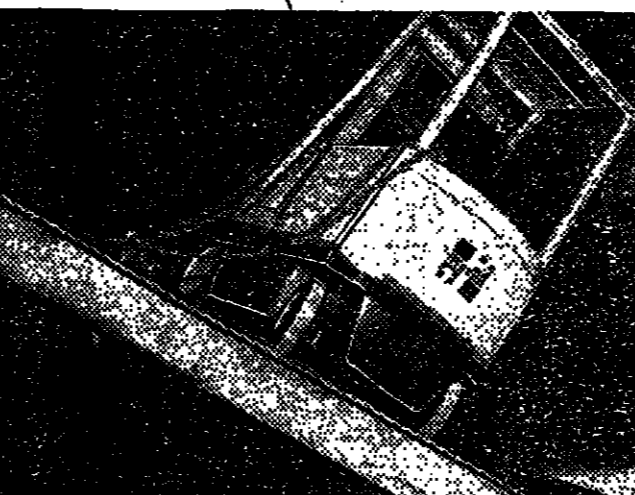
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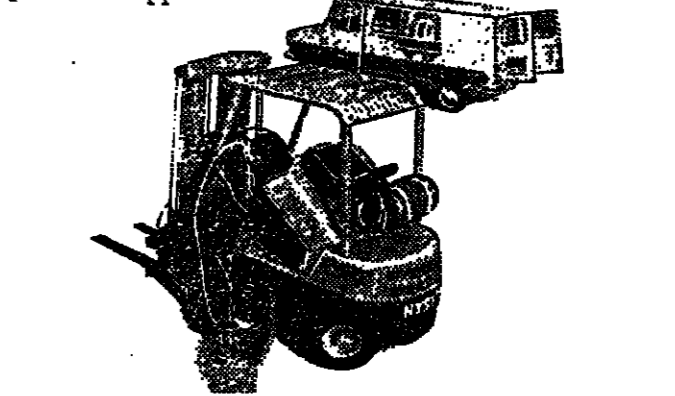
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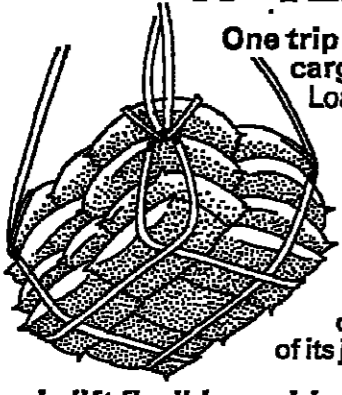
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MECHANICAL HANDLING VIII

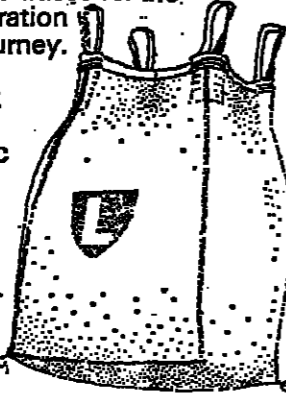
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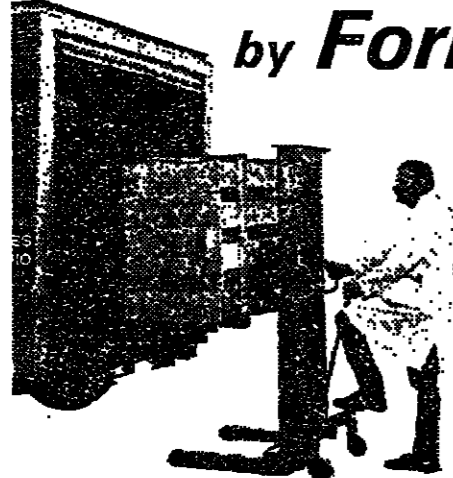


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Growing demand for cranes

ACCORDING TO my nearest Group, and Coles, the Acrow dictionary a crane is "a subsidiary, have both spent the machine for hoisting heavy past couple of years reshaping weights." Alan Walmsley, managing director of Jones Cranes, finishing touches to their com-

There are mobile cranes, which move around and are primarily used by the construction industry. However, the smaller types are often used in industrial environments to carry really heavy weights in and out of buildings for example.

Overhead travelling cranes are used throughout manufacturing industry and are necessarily fixed within the plant in which they are being used.

That leaves the miscellaneous types which are used in docks and ports.

The structure of the U.K. crane industry was radically reshaped during the 1960s until a few major groups emerged. The biggest manufacturer is Clarke Chapman and strangely enough it collected its crane interests only incidentally to its main pre-occupation which was to form a strong U.K. boiler-making business. In the process, though, CC picked up such famous names as Wellman, Clyde Booth, Cowans Sheldon, Boyd and Sir Wm. Arrol, companies which now make up its crane and bridge division.

As for the mobile crane industry, the U.K. is lucky to get enough to have had two very strong groupings arise from mergers. The two groups, promote the range. There are also advantages of scale.

Jones sells more than 60 per cent. of its output overseas and export is absolutely necessary for survival to-day because the U.K. market is more or less dead on its feet and price-cutting is widespread. An indication of the problems was given recently by Richards and Wallington Industries, the biggest U.K. crane hire group, which revealed that the slump in the construction industry in London had forced it to cut its already depleted crane fleet from 300 to 170 in that area.

In these circumstances, the crane manufacturers' current cry that the hire companies should charge the kind of prices which would enable them to replace their fleets more regularly seems hardly likely to meet with a positive response.

Richards and Wallington has an interest in crane assembly through its 50 per cent. stake in Cosmos Crane Company which until recently was called Crown Cranes. This concern was set up only in 1974 and R. and W.'s partner is Clark Equipment of the U.S. Truck mounted cranes are assembled at a factory near Alfreton, Derbyshire

unlike Jones and Coles, Cosmos does not have a big manufacturing back-up facility of its own but buys in most components. Most of the Cosmos management team was recruited from Coles which naturally adds to the rivalry between these two companies.

Ransomes and Rapier, the Central and Sheerwood Trust subsidiary, also makes mobile cranes as do two American-owned companies operating in the U.K., Grove Allen and Ruston Bucyrus, the Bucyrus Erie offshoot.

out £500,000-worth of overhead travelling cranes. Taiwan in 1975 and were fabricated at the Kibridge works. Then Butterley built at its works a £1m. steelworks with a 420-tonne lifting capacity which early in 1976 was right round the world's largest crane of its type to be exported from the U.K.

Operating

There are said to be about 150 companies operating in the overhead travelling crane manufacturing sector with turnovers of less than £500,000 a year.

But the other significant companies in the sector include J. H. Carruthers (owned by Burmah group) and J. Smith (Keighley), part of Thos. W. Ward. Demag, the subsidiary of the West German Mannesmann group, has also invested considerable sums at its Banbury factory which produces overhead travellers.

There is only limited international trade in these types of cranes because of their large structures and weight. When sales are made overseas the export content consists mainly of the hoisting and control gear, the remainder of the steelwork being supplied locally. Companies like Herbert Morris are exporting crane "kits" consisting of motors, winches and so on with some success to a number of overseas countries.

There are exceptions to this general rule. Carruthers shipped

Developed

The Coles concern developed from the old Coles company and from Priestman (still a name to be reckoned with but mainly for construction equipment these days) and Steel Cranes.

Similarly, Jones Cranes is not the old Jones company but now takes under its banner the former British Hoist and Crane business and Crane Travellers. Jones and Coles are alike in that they both believe in going for a high added-value content in their products and they make a great many of the parts and components which go into their cranes—in Jones's case only 30 per cent. of the components are bought in.

Mr. Walmsley, whom I quoted earlier, says that by putting the three 600 Group crane concerns together he expects to get better market penetration because it will be easier to promote the range. There are also advantages of scale.

Efficient warehousing reduces costs

THE COST of holding warehoused stocks of manufactured goods, though a necessity, has become an extremely expensive activity which many companies wish they could eliminate altogether; instead they have to compromise by reducing costs wherever possible.

Although most companies can see some of the shortcomings of their particular warehousing system, the bottlenecks and inefficiencies, it is not often easy to rectify them. Nor are the hidden costs often apparent. These include waste of space, delays in retrieving goods, which while lying unused are expensive in terms of unearned revenue.

In essence, good warehousing means the most efficient use of resources. So if more square footage of floor space is not easily available, the alternative may be to go upwards. In recent years the limits of height have been increasing again due to new techniques and technology, but even a vehicle as versatile as the fork lift truck has its limits. Additional height obviously means additional time, and it has other disadvantages.

In large-scale operations automation has produced important efficiency improvements and the future implications are equally encouraging; in these operations trained staff are required to supervise the equipment, which may be controlled by a small computer which controls the stacking and retrieving process.

The location of the warehouse also plays an important part in this decision-making process; for example, an area of high land values suggests that as much use as possible should be made of available height. The speed of turnover of goods is also a vital factor in the shape and size of warehousing.

Overall, it is essential to suit the system to the type of goods concerned. A consultant will in most cases be able to analyse these factors and offer a number of options within the confines of planned expenditure. Where necessary they will also play a part in the construction, assisting in the procurement of equipment and consulting with the architects.

While a high degree of automation has many advantages in reducing labour costs and improving efficiency, a danger often exists in terms of its lack of flexibility. It can be an expensive mistake if changes in type of products become necessary. More conventional systems, which rely on the use of fork-lift trucks, have the great advantage of adaptability. Clearly this safety net is something which is highly regarded by industry. Judging by the steady demand for the various types of fork-lift trucks available.

In looking for additional warehousing space, companies often come up against severe problems. If there is a need for additional storage space, it is likely that there is also pressure on production space, and it may appear necessary to look at off-site warehouses. However, this has caused severe problems for some companies, and in these circumstances some expenditure on more sophisticated warehousing equipment is often preferable.

As in the past, the main concern about pallets is the cost of losses. In almost every way pallets have proved to be an ideal means of transporting and storing goods cheaply and efficiently, yet the cost of replacing lost or broken units

correct timing. This will be the higher technology to do savings through a reduction in labour and associated costs. Seen in this context, any company which has become used to a wasteful system of utilizing "spare" floor space, or finds warehouse space under-utilized must clearly have the opportunity for savings although means of doing so may not immediately appear. Unfortunately, consultants are always as inexpensive as the may sound, particularly for small operations, but they are nevertheless likely to be beneficial in the long term.

Not only will they examine the warehouse operation itself, but its suitability for a company in terms of its location. With rising transport costs it can also be a vital factor in determining its efficiency. This context it is perhaps worth recalling that pure handling costs of materials which go to the manufacture of virtually any product retailed in a country account for one-third of the cost of the product.

Automation

But it is again clear that the key to success in this matter is choosing the right degree of automation, so that it is neither too sophisticated for the job nor so basic as to create unnecessary work. The main advantage of the system is the fast and infallible "memory" of the computer, which eliminates mistakes, and the extremely tedious type of work in warehouses, which is not conducive to efficiency.

Less sophisticated automation is also available to record and retain instructions so that operations are always performed in a chosen sequence with the

Pooling pallets may help

THE USE and misuse of pallets in Britain is a subject which has been widely discussed but not, greatly understood, due largely to the lack of reliable information about the subject. Now, it is hoped, a new survey will provide much of the information necessary about the operation of the pallet system to correct the faults.

The survey, which has been long awaited by the industry, has been carried out on the recommendation of the Department of Industry's Committee for Materials Handling by the National Materials Handling Centre. Although publication has been delayed, the report is now expected to be released in the near future.

As in the past, the main concern about pallets is the cost of losses. In almost every way pallets have proved to be an ideal means of transporting and storing goods cheaply and efficiently, yet the cost of replacing lost or broken units

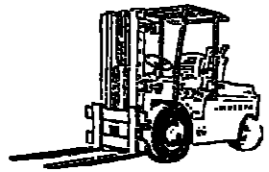
remains a concern. Until some solution to this problem is found the system cannot be regarded as ideal. One of the findings of the survey was that in 1975 the total pallet population of the country was between 25m. and 30m. of which approximately 5m. returnable pallets were "lost", that is either scrapped or were untraceable. In addition to that figure, some 1.5m. expendable (non-returnable) pallets were scrapped in 1975. The survey was first set up to determine these numbers, the number of pallets manufactured annually and the loss from deterioration and other causes to consider alternative methods of reducing costs such as employing materials other than wood and the use of better methods of control; and finally to propose methods of implementing any changes that may be necessary. The figures

Estimates It is estimated that 11m. units are produced each year at a total value of £30m. Of the 5m. put into action in any year, around 1m. are recorded as being broken or broken, while about 1m. are apparently vanish into thin air. Although the problems of pallets are fairly obvious, they are serious proportions for large companies which can afford annual replacement costs of millions of pounds. The system used in

Some of the things you won't be seeing at the exhibition



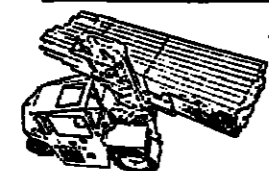
Matbro Yard Trucks Designed to operate in the most rugged and difficult conditions. Ideal for mining, quarrying, steel and brickmaking industries. Long wheelbase and wide track ensures exceptional stability. Large pneumatic tyres give excellent traction.



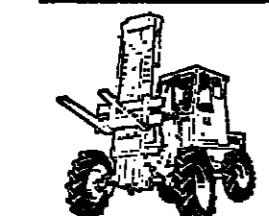
Matbro Compacts Five different capacities with options of Diesel or L.P. Gas engines for indoor and outdoor work. Small turning circle enables this truck to operate in the tightest corners. Fully automatic transmission and full power steering makes it simpler to operate than the average motor car.



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CONTINUED ON NEXT PAGE

MECHANICAL HANDLING IX

The National Centre

Joy 10 1975

SMALL COMPANY... adding to industry's costs began... Yet its birth was accompanied by considerable scepticism...

In the course of the year, the Centre is likely to have helped some 200 companies in one way or another on specific problems...

Thirdly, the Centre is heavily involved in staff training through seminars, residential courses and so on...

Then there is the Centre's work in auditing costs and efficiency for distribution and production companies...

In all this, the Centre does not just confine its activities to this country. It has participated in seminars in France and Jamaica...

of operational requirements for useful, carry with them on this system in the 1980s, and the results are expected to be unpublished some time this summer...

Potential In many countries of the Third World, for example, the potentialities of air cargo itself are only just being realised...

Worthwhile

Each obtains an average audience of between 80 and 100 people, and follow-up questioning of the participants has shown that it is rare for those taking part to feel that they have not been to something worthwhile from the point of view of their business.

Servicing air cargo

WORLD AIR CARGO traffic is ample in the design of new freight handling systems, new terminal buildings, improved types of aircraft on the physical side...

To-day, by far the bulk of all air cargo is still handled in the traditional fashion - being loaded and unloaded by manpower alone, occasionally supported by a few forklift trucks...

established The Centre was established in years ago by the old industry of Technology, the Institute of Materials Handling, Federation of Associations of Materials Handling Manufacturers and the Cranfield Institute of Technology...

Pallets

figure, subtracting the number of accounted-for pallets from number produced, is never less felt to be on the low side, as some considerations are taken into account...

This expansion is creating, and will continue to create, a number of new opportunities and some new problems for all those engaged in this side of the air transport business - for ex-

Efforts

This is not for want of trying on the part of the companies making the equipment. They have made determined efforts to interest the airlines and airport authorities in what they have to offer...

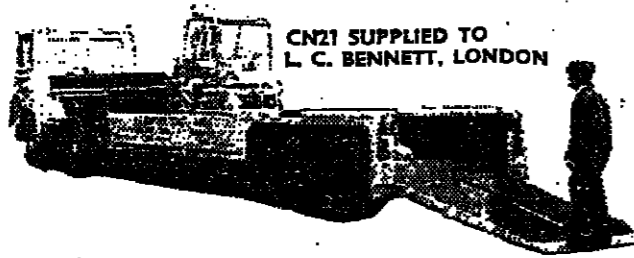
For you, it's a marriage of convenience. Think of the strength of a leading fork truck company. Then double it. Coventry Climax and Conveyancer are now together. With perhaps Europe's largest fork truck range - and superb joint facilities for customer service. That makes for a new force to be reckoned with at home, and in export markets. Because now we're together, nothing's missing. Only the competition. Coventry Climax... Together, we mean business.

Michael Donne Aerospace Correspondent

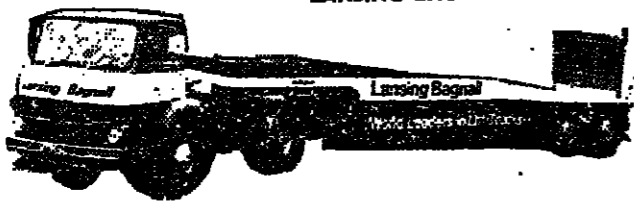
Lorne Barling

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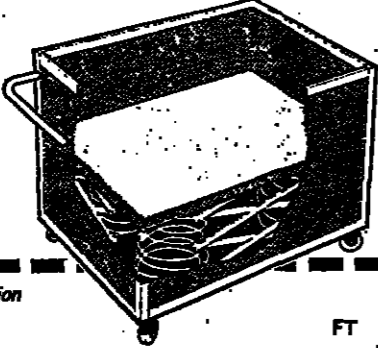


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MECHANICAL HANDLING X

Greater efficiency from improved racking

MODERN RACKING techniques have become such an integral part of warehouses that any planning of new or wholly re-organised warehouses should ideally be based on the kind of racking system and any related automation to be used.

In many cases racking systems are part of the structure of new warehouses, a trend which has necessitated this forward planning and will probably do much to improve safety and efficiency in the longer term.

Demand for racking systems is largely dependent upon the confidence of companies, which are generally not inclined to go in for heavy capital expenditure on new warehouse equipment, or even modernisation when their liquidity is not good.

The recent economic difficulties have clearly affected demand, but according to some companies there is now some improvement in orders, although rising costs both of the equipment and installation have had a dampening effect.

available space, and in most cases the only direction possible has been upwards. This has created the need not only for efficient racking, but much greater strength and reliability. This reliability is not only essential for the protection of valuable goods stored in warehouses, but for the prevention of collapse, which in confined spaces will almost certainly cause serious injury to anyone involved.

Although a wide range of variable configuration racking systems has become available, and has provided much needed flexibility within the warehouse, it has created the need for added precautions when being moved.

The makers of this equipment are continually improving these systems to improve both efficiency and safety, but there remains the danger of a collision by a fork lift truck which can have disastrous effects. Although these remain comparatively rare, it is a matter which has caused serious concern and continues to be studied.

The important factor in these instances is whether the racking system will withstand reasonable impact without causing a progressive collapse of racks. Most manufacturers of reputable and indeed saleable systems have conformed to the Storage Equipment Manufacturers' Association design code, which is continually evolving and which is expected at some future date to cover accident damage.

Versatility

Fork lift trucks are nevertheless continually improving in minor ways, marginally improving the efficiency of pallet based operations. For sheer versatility, particularly in comparatively small-scale operations, they are unsurpassed. The major advances have been reach trucks, enabling two-deep racking, and high-rack stackers, which only a minority of manufacturers adhere to.

The National Materials Handling Centre at Cranfield continues to do valuable work on safety factors and has recommended further study into the risk of collapse of pallet racking. In the U.S. there are two different codes covering racking, one on a general level and a second, higher code, to which only a minority of manufacturers adhere.

the sometimes extremely narrow aisles between racks. Some-times fitted on the trucks are guide rollers, which in turn edge up to guide strips on the racking or floor, preventing deviation.

But recent investigations by the Materials Handling Centre revealed that in many typical warehouses much of the racking at present in use did not have its components positioned in such a way as to maximise the margin of safety against collapse due to impact, and hence contravened the spirit of the Health and Safety Act.

It is clear, therefore, that much of the effort of manufacturers in designing and manufacturing the product to a high standard of safety is wasted through inefficient installation of racking. While this ought to be a matter taken up at individual company level by trade unions and safety officers, it has also been suggested that a wide ranging industry body, including interested parties and the Health and Safety executive, ought to be formed to tackle the problem.

The major racking manufacturers in the U.K. have experienced comparatively good demand for their products recently, although this has levelled off in the last few years after a period of steady growth. Last year sales were estimated at a value of about £13.2m, compared with £13.8m. in 1975 and £13.9m. in 1974, but with steady buying now taking place it is thought that sales will be around the £14m. mark this year. It is noted that from the third quarter of last year sales

and orders have picked up considerably.

The major suppliers remain Dexion, Bottless Systems, Integrated Handling and Actrow. Dexion reports that exports of its products are now doing well and the company has taken advantage of favourable conditions such as the depreciation in sterling. The competition between British suppliers remains intense, with some smaller companies experiencing difficulties when up against their bigger counterparts.

Although independent consultants may be used in many cases to advise on the type of system most suitable for a particular application, the rack manufacturers also offer their expertise, which often goes far beyond the racking itself. They are able to suggest which type of automated system is best suited to their product, but ideally they must be consulted at the earliest stage of planning, if the best results are to be achieved.

The cost reductions which can be achieved from improved racking are not just from more efficient organisation of stocks, but can come from labour saving, and a reduction in crushing and damage, a high cost item where fragile and valuable goods are concerned.

There is no doubt that in the long term automated storage and warehousing systems will become more widespread, particularly with the availability of cheaper mini-computers, and companies would be wise to seek the best advice with this in mind before making important decisions.

Lorne Barling



Racking can be a highly sophisticated business. In the bulk storage area at Link Paper and Supplies the Dexion Speedlock narrow-aisle pallet racking system is 180 feet long and 37 feet high, with pick up and deposit stations at the end of each run.

Flexible financial alternatives

WITH INFLATION continuing at extremely high levels industry is faced with increasing pressure to preserve liquidity ratios in the face of rising working capital requirements. This is bound to reflect on demand for mechanical handling equipment given that the financing arrangements available are dependent on the financial position of the company and the climate in the credit industry. Moreover, there are uncertainties over production cycles and demand patterns so there is a lack of incentive to gear up production capacity.

In the circumstances it is not surprising that U.K. demand for mechanical handling equipment remains depressed. The latest report from the National Economic Development Office shows that the larger form of equipment such as lifts and escalators are particularly dull at the moment. But the forecast increase in manufacturing capital investment during the current year should lead to a gradual improvement in home demand for general mechanical handling equipment.

With demand throughout industry very patchy no one form of finance is generally acceptable. After all order books, tax positions and profits and borrowing levels are all governing factors. There are basically three forms of finance alternatives open to companies. There are the medium-term loans such as the banks, hire-purchase agreements, contract hire or leasing while more longer-term capital can be raised by equity or loan stock issues. And of course the company can finance the purchase from internal resources.

Borrowings

Borrowings from the banks on a medium-term basis is clearly attractive at the moment with interest rates at historically low levels. A prime borrower can now get money from the clearers at a rate of one to two points over base rates which comes out at 9 1/2 to 10 1/2 per cent. But interest rates can fluctuate widely and it is not always wise to be too committed to the banks for extended credit.

Anyway many of the smaller companies may not be in a position to take advantage of the current cheapness of bank borrowing. What is more it is sometimes an advantage to take out a fixed rate of medium-term debt since then the company is in the position to make accurate budgeting which is essential to keep control of cash flow projections. A hire-purchase

agreement or some form of leasing or hiring arrangement would be at a fixed rate over a medium-term and these can be obtained from the larger finance houses or in some cases through the manufacturers themselves.

While both of these transactions give the company assurance of finance over an agreed period of time and of course at a fixed price they have one basic difference, namely the tax treatment. Therefore it is the particular tax position of the company that governs just which of these financing methods has most appeal. The finance houses are always prepared to give guidance on these matters and United Dominion Trust for example has produced a useful booklet on the subject.

Under a hire purchase agreement the user of the goods becomes the legal owner of those goods when the final payment has been paid. But for taxation purposes the company is treated as-if it is the outright owner from the time of taking on the equipment. This means that the company is able to take advantage of the whole of the 100 per cent. first year allowance just as it would if the purchase was made for cash. By the same token if the company can qualify for any regional development grants these again would immediately become due. Of course, the company needs to be earning sufficient profits to offset the allowance against.

At the moment interest rates on hire-purchase agreements have yet to be readjusted to old differentials over bank lending. This is, however, understandable since the fall in bank rates has been sudden and a downward movement is surely on the cards. As such any company contemplating a hire-purchase deal as a means of financing new equipment purchases should really wait for this expected drop.

Leasing arrangements are more suitable to the company that is not in a position to take advantage of the 100 per cent. first year allowance. Under a leasing arrangement the lessor remains the owner and at no time does the ownership pass to the user. As such the finance house, or any other form of lessor, then becomes entitled to the 100 per cent. allowance and any regional development grants. If the finance house is in a position to take advantage of these allowances then some of the benefit could be passed on to the user, by way of a more competitive leasing charge. Contract hire is a form of

leasing but it also contains servicing agreements and this is mainly used when vehicles are involved. Fork Lift Trucks are one of the most common form of materials handling equipment and here rental or some form of leasing arrangement is extremely popular. Lansing Hike (rights issues of Bagnall the largest fork lift company in the U.K. has both a rental and leasing subsidiary and the number of new truck acquisitions that are made by means other than direct purchase is rising.

Long-term

H.P. agreements and leasing arrangements are acceptable for moveable and easily disposable forms of equipment but it is unlikely that these forms of finance would be available for more permanent and larger fixed capital equipment, such as conveyors. For this more expensive and fixed capital equipment the company would need to make some form of long term arrangement. Numerous companies are now making rights issues of equity to raise funds for capital expenditure programmes. The market climate is clearly healthy for

such issues. Equity value is reasonable from both the company's position and investors while there is no shortage of stock in the market. This means that there is no real barrier to the share-ownership and here rental or some form of leasing arrangement is clearly if there is a dividend extremely popular. Lansing Hike (rights issues of Bagnall the largest fork lift company in the U.K. has both a rental and leasing subsidiary and the number of new truck acquisitions that are made by means other than direct purchase is rising.

A fixed term of debt is such as bank stock or debentures has not really been favoured by the companies in the past three or four years since interest rates have been extremely high but this fund raising could soon become attractive again.

So while the urge to invest production capacity and efficiency may not be that strong, future profits trends in the conditions there is no lack of financing schemes available to those who wish to make form of investment in mechanical handling equipment.

David

If you've never owned a Caterpillar Lift Truck, see what you're missing at MOVEMENT '77.

The Caterpillar stand will feature a walk-through lift truck history tracing developments from 1919 to today's 46-model range of quality trucks.

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Experience: Caterpillar's own 50 year reputation in machinery building combined with its acquisition of lift truck pioneer, Towmotor, puts a wealth of rugged knowledge behind the range.

Quality: From pioneering towing trucks in 1919, and introducing one of the first conventional lift trucks in 1933, Caterpillar now manufactures in 19 plants that includes the new Leicester lift truck facility where one out of every 7 men on the production line is devoted solely to quality control.

Engineering: Through heavy investment in development and engineering, the company now employs over 4,000 scientists and technicians in research alone.

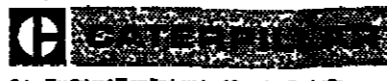


Product Support: With 23 major parts depots, and 900 service outlets all computer-linked in 120 countries, Caterpillar's local dealer network can keep lift trucks working at peak performance throughout the world.

Range: To cover almost every conceivable materials handling task, Caterpillar offers 46 different models from 2,000 lbs. to 60,000 lbs. (1,000 to 27,300 kg) with a choice of cushion or pneumatic tyres and diesel, petrol, electric or LP Gas power.

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10/10/77

Commercial Union reaches Glynwed sees at £18m. in first quarter

BOARD MEETINGS

The following companies have held board meetings since the publication of the previous issue of the *Financial Times*. Figures are given in thousands of pounds unless otherwise stated. Figures in brackets indicate the number of directors attending the meeting.

Commercial Union (12) - Reported a profit of £18m. in the first quarter of 1977, an increase of 12 per cent on the £16.1m. reported in the first quarter of 1976. The company's turnover was £157.1m. with an increase of 12 per cent on the £139.7m. reported in the first quarter of 1976. The company's profit before tax was £18.1m. and its profit after tax was £15.8m. The company's dividend for 1976 was 10p per share.

Glynwed (12) - Reported a profit of £14.6m. in the first quarter of 1977, an increase of 12 per cent on the £12.9m. reported in the first quarter of 1976. The company's turnover was £120.5m. with an increase of 12 per cent on the £107.5m. reported in the first quarter of 1976. The company's profit before tax was £14.6m. and its profit after tax was £12.9m. The company's dividend for 1976 was 10p per share.

P. Panto declines to £0.26m.

Automated Security prospers

To-day's company meetings

Winding-up orders

"Group sales and profit are in excess of those for the same period last year."

We have increased our exports profitably and our export sales are over 50% higher than the same period last year."

Bernard Cotton, Chairman.

Unaudited results for the 25 weeks to:		
March 25 1977	March 19 1976	
Sales	18,243	15,332
Group trading profit	1848	1393
Attributable earnings	374	341
Rate of ordinary dividend	1p	1p
	per share	per share

SBORN An international engineering group

N. Midland Construction midway loss

Boustead set to expand

Farnell's growth to continue

RESULTS AND ACCOUNTS IN BRIEF

CLYDESDALE INVESTMENT CO. - Reported a profit of £1.2m. in the first quarter of 1977, an increase of 12 per cent on the £1.0m. reported in the first quarter of 1976. The company's turnover was £10.5m. with an increase of 12 per cent on the £9.4m. reported in the first quarter of 1976. The company's profit before tax was £1.2m. and its profit after tax was £1.0m. The company's dividend for 1976 was 10p per share.

LEWIS & CLARKE (12) - Reported a profit of £1.5m. in the first quarter of 1977, an increase of 12 per cent on the £1.3m. reported in the first quarter of 1976. The company's turnover was £15.5m. with an increase of 12 per cent on the £13.8m. reported in the first quarter of 1976. The company's profit before tax was £1.5m. and its profit after tax was £1.3m. The company's dividend for 1976 was 10p per share.

WINDING-UP ORDERS

WINDING-UP ORDERS

MONEY MARKET

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Bank	Rate	Bank	Rate
Bank of England	8.75%	Bank of Scotland	8.75%
Barclays Bank	8.75%	Clydesdale Bank	8.75%
Lloyds Bank	8.75%	Royal Bank of Scotland	8.75%
Midland Bank	8.75%	Co-operative Bank	8.75%
National Westminster Bank	8.75%		

Short-term fixed period interest rates were fairly steady, with discount houses buying rates for three-month Treasury bills unchanged at 7.75%. Longer term rates were generally firmer however.

Discount houses paid 7.75% per cent for secured call loans at 7.75% per cent. Rates for unsecured call loans were 7.75% per cent. Treasury bills were 7.75% per cent. Treasury bills were 7.75% per cent. Treasury bills were 7.75% per cent.

APPOINTMENTS

Director INDUSTRIAL DEVELOPMENT UNIT

THE DEPARTMENT OF INDUSTRY is to appoint a successor to the present Director who is due to return to the private sector on completion of his secondment.

THE Director controls a high calibre team of financial executives drawn primarily from outside the Civil Service who appraise applications for assistance under the Industry Act and negotiate terms. The main concern is with regional assistance, industrial sector schemes, rescue cases and the selective investment scheme.

RESPONSIBILITY is to the Permanent Secretary of the Department. The Director holds rank equivalent to Deputy Secretary. Appointment for a term of around 3 years may be on secondment or by direct engagement.

THE requirement is for a record of notable achievement in industry, banking or the accountancy profession and must include proven financial expertise.

THOSE aged under 40 and earning a salary which is not well into five figures are unlikely to have the experience this appointment demands.

Individuals who wish to be considered for this appointment or organisations seeking to nominate a candidate are invited to write in complete confidence to R. T. Addis acting as adviser to the Department.

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Graduate Girls/Graduate Men

COMMODITY Appointments Ltd., traders in commodity administration and accounts. 7th, Gresham Street. 01-439 1701. Floor trader c. £5,000. Commodities see Stephens Selection on Page 37.

COMPANY NOTICES

IMPERIAL CHEMICAL INDUSTRIES LIMITED
NOTICE IS HEREBY GIVEN THAT the Register of 81½ Unsecured Loan Stock 1972/77 will be closed with effect from June 1, 1977 for the purposes of preparing the half-yearly interest warrants payable on June 30, 1977 and repaying the stock on that date. By Order of the Board J. D. COLLINS, Secretary

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Applications are invited from candidates aged 33-40 who have acquired a minimum of 5 years' commercial experience and who are conversant with the workings of the commodity world.

BANKING, INSURANCE AND LEGAL APPOINTMENTS

Jonathan Wren Banking Appointments
The personnel consultancy dealing exclusively with the banking profession.
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A front-rank international investment house wishes to appoint an Assistant Operations Manager aged in his or her early thirties, with a minimum of 10 years' experience, including an in-depth knowledge of Eurobond clearance systems for both the U.K. and U.S. stockmarkets.

BRITISH AEROSPACE Legal Department
A Solicitor or Barrister is needed for the Headquarters of the new Corporation, which is to be located at Weybridge, Surrey.
The successful applicant will be expected to advise the Corporation and its operating groups on all legal aspects of their activities, including the preparation and negotiation of important agreements for the manufacture and sale of aerospace products.
This is an exceptional opportunity for a commercially orientated lawyer able to work with minimum supervision, and will involve some travel.
Salary and other benefits will be dependent on age and experience.
Candidates are invited to write in confidence to Mr. F. P. Rhodes at the following address for an application form:
British Aerospace, Brooklands Road, Weybridge, Surrey, KT13 0RN.

Area Managers
Britannia Trust Management Limited, one of the leading unit trust management companies in the U.K. with £185 million under management and 280,000 unitholders, requires an Area Manager in each of the following areas: London/South East England, Manchester, Birmingham/Bristol.
Candidates (male or female) should have a sound knowledge of the savings industry in general and unit trusts in particular. Their role will be to develop firm business relationships with professional agents such as insurance brokers, accountants, solicitors and stockbrokers but will not involve direct selling to the public.

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Age 25-30? Finished your AIB? Or Newly? Always worked in a Bank so far and not really taking anyone else's AIB?
We do! We install computer systems for international banks, mainly in London, but we do have a number of office and investment in other areas. We have a current need for two or three additional people with soundly based banking knowledge or join our Consultants. We will soon organise some computer experience for you and you can help us in talking with Banks about foreign Exchange accounting and the like.

PUBLIC NOTICES

LOCAL AUTHORITY BILLS
£230,000 of Council Charge (i.e. based on 27.477 maturing 28.10.77 at 8½%. Applications for loans £2,760,000 are shown are £230,000 worth of bills outstanding.

GOURMET
GALLIAPOLI RESTAURANT, of Old Broad Street, E.C.2. Open every day for lunch, dinner and drinks until 3 a.m. 7 days a week, 12.30 p.m. to 1.15 a.m. Mon-Sat. 24, 76, Sat 1922.

LEGAL NOTICES

IN THE HIGH COURT OF JUSTICE
In the Matter of KIRKSHIRE LIMITED and in the Matter of the Companies Act, 1967.
NOTICE IS HEREBY GIVEN, that a Petition for the Winding up of the above-named Company by the High Court of Justice was on the 23rd day of April 1977, presented to the said Court by FREDERICK JAMES ALBERT SHULTZ, of 1, Victoria Street, London, S.W.1, and that the said Petition is directed to be heard before the Court sitting at the Royal Courts of Justice, Strand, London, W.C.2, on the 23rd day of May 1977, and any creditor or contributory of the said Company desirous to support or oppose the making of an Order in the said Petition may appear at the time of hearing, in person or by his counsel, for that purpose; and a copy of the Petition will be furnished by the undersigned to any creditor or contributory of the said Company on payment of the regulated charge for the same.

CONTRACTS AND TENDERS

PETROLEO BRASILEIRO S.A. — PETROBRAS RIO DE JANEIRO — BRAZIL

ANNOUNCEMENT OF COMPETITIVE BIDDING SUPEX-02/57

- 1. PETROBRAS announces the opening of a competitive bidding for petroleum exploration in areas located in the Brazilian Continental Shelf.
2. The relevant contracts shall be executed in the form of "Service Contracts," provided that CONTRACTOR'S remuneration shall be contingent upon the achievement of commercial production from the fields discovered and developed by CONTRACTOR.
3. In order to obtain the application form, interested companies, with experience and tradition in such field of the petroleum industry, are requested to contact PETROBRAS, at one of the addresses below:

- Av. Republica do Chile, 65, 23 Andar, Sala 2339 Rio de Janeiro, Estado do Rio de Janeiro, BRAZIL
—77 South Audley Street, 2nd Floor, London, W1, ENGLAND
—1221, Avenue of the Americas 22nd Floor, New York, N.Y. 10020, USA
—66, Av. Champs Elysees, Seme Etage Paris 8, FRANCE

- 4. The said application form is to be filled in by the interested company, and then returned to any one of the addresses indicated above, until 5 p.m. (local time), the 30th of May, 1977.
5. Each company will be informed on the 13th of June, 1977, of the result of its application in the preliminary selection and of the basic conditions it must comply with for the purpose of making its bids.
6. Participation in the said preliminary selection does not and shall not imply the granting of any guarantees, privileges or rights to any of the interested companies, it being understood that PETROBRAS is absolutely free to, at its sole discretion, cancel, remake or dispense with such preliminary selection, or invite whichever company it may choose in order to contract with for the execution of the services referred to in this announcement.

Rio de Janeiro, May 10th, 1977

EXPLORATION CONTRACTS SUPERINTENDENCY SUPEX

Handwritten scribble at the bottom of the page.

AIRCRAFT FOR SALE COMPANY NOTICES
CITATION TRADING
5/11 115 730 lbs, sleek new
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CONTRACTS AND TENDERS
Democratic and Popular Republic of Algeria
MINISTRY FOR INDUSTRY AND ENERGY
Entreprise Nationale SONATRACH
INTERNATIONAL INVITATION TO TENDERS
An invitation to tender has been launched for the contract at all levels of the carrying out of works on the Project GNL 2 Bethoua (Arzew) in Algeria.

CONTRACTS AND TENDERS
Democratic and Popular Republic of Algeria
MINISTRY FOR INDUSTRY AND ENERGY
Entreprise Nationale SONATRACH
INTERNATIONAL INVITATION TO TENDERS
An invitation to tender has been launched for the contract at all levels of the carrying out of works on the Project GNL 2 Bethoua (Arzew) in Algeria. The tender entails the inspection, analysis and control of all the works of the contractor to which the building of the Arzew natural gas liquefaction plant was entrusted, in the following sectors:
—Planning and Programming
—Costs Control
—Financial Checking

Mixed prospects for Lyle Shipping

RETURNS can be expected in the shipping side of Lyle Shipping Company for at least the half of 1977, says Mr. W. J. Wilson, the chairman in his annual report, but he hopes the company will be partially protected against a steady market by the marketability of the company's vessels.

He expected improvement in the shipping market has been to materialise and while rationally the fleet performance is becoming more effective the ships continue to be affected by current conditions. It will require a stronger recovery in worldwide economic activity before they can realise their true potential.

Fortunately four of Lyle's ships are long or medium-term contracts, which provides a steady income. The remaining fleet is operating under a pooling agreement with the ships owned by H. Hogarth and Sons.

The insurance-brokerage interests expected to maintain progress in engineering should have a better year, states the chairman.

Share activities should continue to be quiet substantially and diversifications should be increasingly significant in the group's portfolio.

Reported on April 30, group turnover and shareholders' funds for 1976 were £22,088,478 and £29,330,000 respectively, compared with £19,330,000 and £24,000,000 for the previous year. This increase in turnover was due to the entry into service of ships and operational profits were higher owing to low freight rates and rising costs. However, the fits from sale of ships have long-term commitments but it is expected that these two ships will be sold in the course of the year.

Part of the fall in the amount of the surplus since the previous year is due to the sale of Cape Wrath and Cape Nelson. The surplus on these two ships has now been brought into shareholder reserves through the profit and loss account, a process which will be repeated on future sales of ships.

The remainder of the fall is due to some decline in the values of our ships owing to the current low level of freight rates.

A statement of source and application of funds shows an increase in liquid funds of £9,960,000 (£23,370,000 decrease).

Inflation adjusted assets show turnover of £13,010,000 (£11,970,000) on a CPP basis, a pre-tax loss of £1,330,000 (£3,310,000 profit) and a loss per share of 22.1p (34.6p earnings) compared with earnings of 15.7p (loss 1.7p) on a historical basis.

Mr. Wilson will retire at the end of the annual meeting to be held in Glasgow on June 2 at noon. He will be succeeded by Mr. Herbert A. Walkingshaw who will also be managing director.

Francis Inds. to spend £1.2m.

The directors of Francis Industries have recently approved a plan to implement a £1.2m. capital expenditure programme for 1977, which indicates their confidence in the future, says Mr. D. M. Saunders, chairman.

He states that it is the directors' aim to launch new products and to introduce new equipment.

Although there is little likelihood of any significant increase in demand at the group's subsidiary, United Lift Company in the near future, repair and service demand is strong and this contributes to the group's overall profitability in the current year, members are told.

As already reported, pre-tax profits for 1976 surged from £9,470,000 to £13,300,000. At December 31 West City Securities held 13.8 per cent of the combined Ordinary and Preference capital of the group. At April 6, 1977 John James Group was interested in 23.8 per cent of the Preference shares and Jove Investment Trust 15.5 per cent.

A statement of source and application of funds shows an increase in cash of £11,033,000 (£167,435).

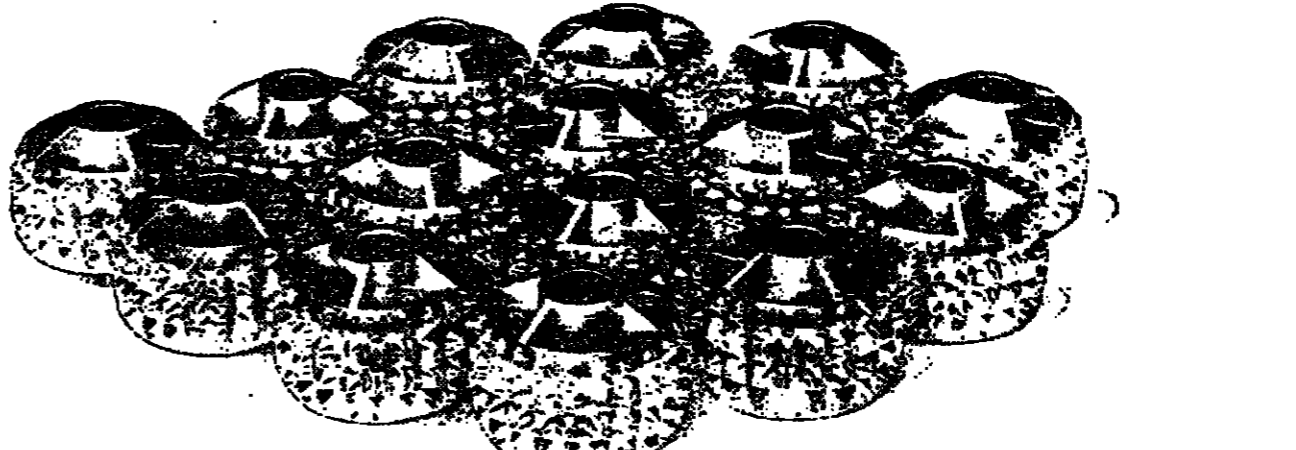
Morris & Blakey disappoints

Disappointing first quarter 1977 results are reported by Morris and Blakey Wall Papers due to the continuing fall in real disposable incomes.

However, according to Mr. A. G. Morris, chairman, D-I-Y is now the third most popular activity and this, along with the trend toward increasing home ownership, gives him cause to look forward to the future with confidence.

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Company _____

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GHF GROUP LIMITED

Metallurgical, Mechanical, Electrical & Instrument Engineering

Results in brief

	1976	1975
Profit before taxation	1372	693
Taxation	696	354
Profit after Taxation	676	339
Dividends paid or proposed	168	153
Earnings after tax per Share	32.3p	16.2p
Net assets per Share	305p	283p

"The present position justifies expectation of a further increase in profits for the current year"

Langley Alloys Limited
Hugh Smith (Glasgow) Limited
Grosvenor Hypower Limited
Brentford Electric Limited
E.N. Bray Limited
Counting Instruments Limited

ABERDEEN TRUST LIMITED

Unaudited Interim Report for Six Months ended 31st March, 1977

	31st March, 1977	31st March, 1976	Year ended 30th Sept., 1976
Gross Revenue after deducting interest and expenses	£810,193	£744,414	£1,683,097
Less: Taxation	302,079	277,854	620,542
Value of Net Assets	£508,114	£466,560	£1,062,555
Including full dollar premium of	£38,458,988	£37,159,669	£35,080,705
	4,029,393 (411%)	4,483,566 (501%)	5,353,996 (482%)

Net Asset Value per Ordinary Stock 25p unit after deducting prior charges at redemption values 160p 154p 145p

An Interim Dividend of 1.25p net per Ordinary Stock 25p unit (last year 1.167p) has been declared for the year ending 30th September, 1977, payable 24th June, 1977.

10 Queen's Terrace, Aberdeen, AB9 1QJ. EAST OF SCOTLAND INVESTMENT MANAGERS LIMITED. Managers and Secretaries

Hudson's Bay Company

INCORPORATED 2ND MAY 1670

Increased sales, earnings and dividend

The following are extracts from the Directors' report and the Accounts for the financial year ended 31st January, 1977.

The Company achieved increased earnings in 1976, a year which will be remembered as a difficult one for the merchandising industry in Canada. Earnings were up 6.8% to \$24,810,000 from \$23,004,000 in 1975. Sales and revenue increased by 13.4% to \$1,348,939,000 from \$1,189,530,000 the year before.

The Board has declared a semi-annual dividend of 32 1/2¢ per share, an increase of 2 1/2¢ per share over the semi-annual dividends paid in 1976.

Merchandising. The principal activities of the Company are in the merchandising sector, comprising retail, wholesale, and fur operations. Merchandising earnings before tax and interest were \$48,830,000 in 1976, up from \$46,302,000 the previous year.

Retail. The quarterly rate of increase of retail sales declined throughout the year as the Anti-Inflation Programme had a progressively dampening effect on consumer spending. Seven stores are now under construction. Six of these will open in 1977 and the other in 1978.

Wholesale. The wholesale operation continued to grow in sales and earnings. Three new branches were opened, making a total of 36.

Fur. Increased demand for fur for fashion, as well as for their utilitarian uses have resulted in higher price levels. Our wholly-owned auction houses in Montreal and New York, together with Hudson's Bay and Amnigs Limited of London (69% owned) achieved aggregate records in both sales and profits.

Natural Resources. Our earnings from natural resources were \$10,480,000 in 1976, an increase of 30.7%.

Hudson's Bay Oil and Gas Company Limited, in which we have a 21.2% interest, achieved record levels of revenues, funds generated from operations and net earnings. Net earnings were \$78,875,000, an advance of 12.8% over 1975. An aggressive exploration and development programme has been planned for 1977.

Stebens Oil & Gas Ltd., in which our interest is 34.8%, reported continued growth in earnings and cash flow. Net earnings increased to \$10,846,000 (\$1.16 per share) compared with \$4c per share for the previous year. An active exploration and development programme will continue in the current year.

Real Estate. Earnings from our real estate interests in 1976 before tax and interest amounted to \$24,168,000 compared with \$15,588,000 in the previous year.

Earnings of Markborough Properties Limited, in which we have a 64.3% interest, for the year ended October 31, 1976 improved by \$9,489,000 from \$4,289,000. The most important factor in the improvement was the increased volume of land sales. Although land sales are expected to be substantial in 1977, they will not be as high as the record level of 1976. Accordingly, earnings of Markborough will be below those of 1976 but are budgeted to be above those of 1975.

Outlook. This will not be an easy year for the Company. The outlook is favourable for increased earnings from natural resources. On the other hand, because of reduced land sales, profit from real estate will be below the level achieved in 1976. In merchandising, we look for a continuation of last year's trends, with consumer spending restrained by the Anti-Inflation Programme and a sluggish economy. Much depends on the actions of the Government with respect to a personal tax cut and the ending of the controls Programme. Company management is, in our opinion, better prepared to cope with this difficult situation than it has ever been.

ENTERTAINMENT GUIDE

OPERA & BALLET

COLISEUM, 838 31st St. (at 10th St.)
TONY TOMER, LUTYAL BALLETT
TONY TOMER, LUTYAL BALLETT
TONY TOMER, LUTYAL BALLETT

THEATRES

ADLER THEATRE, 101-103 St. James St. W. (at 10th St.)
DUCHESS, 101-103 St. James St. W. (at 10th St.)
THE ADLER THEATRE

CONCERTS

ROYAL FESTIVAL HALL, 222 Strand, London W.C.2
ROYAL FESTIVAL HALL, 222 Strand, London W.C.2

ART GALLERIES

AGNEW GALLERY, 43 Old Bond St., W.1
AGNEW GALLERY, 43 Old Bond St., W.1

CLUBS

THE PINK PANTHER, 101-103 St. James St. W. (at 10th St.)
THE PINK PANTHER, 101-103 St. James St. W. (at 10th St.)

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INTERNATIONAL FINANCIAL AND COMPANY NEWS

Geneva bank in heavy loss

By David Egli
GENEVA, May 9. THE SWISS Banking Commission has ordered the immediate closure of a Geneva private banking firm, Leclerc and Co., after a visit by commission inspectors last Friday. The order to go into liquidation followed losses which the bank is said to have sustained as a result of heavy investment in a tourist resort area in the Canton Valais. This is said to involve an amount of about Sw.Frs.30m. (£7m.) but the figure could be considerably higher. After an emergency meeting, the Geneva Association of Private Bankers stated that it would guarantee the client deposits of Leclerc, one of its members. There is some uneasiness here that this new bank collapse, coming in the wake of the losses incurred by the Chiasso branch of Credit Suisse may cause a further erosion of confidence in Swiss banking in general.

N. Jernverk record setback

By Fay Gjester
OSLO, May 9. NORSK JERNVERK, Norway's state-owned iron and steel concern, made a record loss of Kr.7.6m. in 1976, after taxes and depreciation, compared with a loss of Kr.19.5m. in 1975. Group turnover increased slightly to Kr.864m. from Kr.811m. a year earlier, however this improvement—more than offset by rising costs—mainly reflected higher sales by the concern's tinplate plant in Bergen.

P. Gummiwerke passes dividend

BY JONATHAN CARR

BONN, May 9.

PHOENIX Gummiwerke made only a modest profit last year and plans no dividend payout. Key reasons are fierce competition in a weak tyre market combined with big expenditure as the company restructures to concentrate on its successful, technical rubber products. The rosy days of the "traditional" 16 per cent. dividend at Phoenix are long since gone. It was last paid in 1971 when the company made a profit of DM7.96m. Then for three years in a row, shareholders received nothing as the company struggled with rising raw materials costs and a depressed motor vehicle industry. Things improved in 1975, when net profits totalled DM2.3m. and a minimal 5 per cent. dividend was paid. Now even that has been dropped. In 1976 Phoenix made net profits of DM139,000 on sales

which were virtually unchanged. Parent company turnover totalled DM537m., slightly below the 1975 level; that of the European group DM605m., a little above. Even with the boom in the West German motor vehicle market the tyre sector remains the company's main problem. Over the years Phoenix has cut back the proportion of tyre sales in its turnover from more than 50 per cent. to less than 40 per cent. It has concentrated in particular on production of high quality, steel-belted radial tyres. But the very durability of these means replacements are bought less often. Then there is fierce competition from the Americans and French. German producers still provide most of the tyres for when it comes to replacement tyres, imports take about 60 per cent. of the business. High labour costs are one factor driving the German producers onto the defensive. Phoenix's own wage costs rose last year by almost nine per cent. (and raw materials costs by nearly eight per cent.). The number in France went up by 10 per cent. to 1,200. Success elsewhere is making up for the tyre setback. Sales of technical products—like foam rubber and elastic parts to absorb shock—rose by some 10 per cent. last year and are exceeding expectations in the first months of this. Rubber shoes too are selling well. These advances are encouraging Phoenix to invest DM40m. this year—to continue rationalisation of tyre production while expanding capacity elsewhere. Phoenix believes the strategy will greatly strengthen its profitability—but it is not saying when.

West German companies cautious on Shah's hints

BY ADRIAN DICKS

BONN, May 9.

SUGGESTIONS by the Shah of Iran that major new industrial joint ventures with West German companies are imminent were greeted cautiously to-day by three of the companies concerned. But all three confirmed that contacts with Iran are continuing, and left open the possibility that several deals may reach fruition within the next few months. Volkswagen, which has been negotiating intermittently with a group of Iranian private investors on the terms of a car assembly plant, said to-day that "nothing concrete" had been concluded. A spokesman for the motor group also said it was premature to speak of dates or of how long the discussions might go on. In an interview with the West German mass circulation Sunday newspaper "Bild am Sonntag" yesterday, the Shah indicated that he favoured VW as a prospective manufacturer in Iran "because we are going to increase the petrol price and it is an economical car." He added that an agreement might be signed "perhaps within two weeks, perhaps later." The VW spokesman stressed, however, that no details had yet been agreed, and added that the German company does not take the view that other European motor groups known to have been talking to the Iranians are necessarily out of the competition. Veba, the oil and electrical utilities group in which the German Federal Government has a 43 per cent. stake, also stated that "nothing" had changed since mid-March when its chairman, Herr Rudolf von Bennigsen-Voerder, confirmed that the company had been involved in talks with the Iranians. He added then that these had been "discussions in the normal way of business" such as Veba had carried out with other suppliers of crude oil including the British National Oil Corporation and the Norwegian concern Statoil. The Veba chairman denied West German Press reports that the Iranian National Oil Company was interested in taking up a shareholding. Apart from the West German Government, there is no single known large holder of Veba shares who might be in a position to sell a block. In his interview, the Shah confirmed his interest in acquiring down-stream enterprises, especially in chemicals, but said that "do something, it will be Veba"—a reference appeared to exclude the Siemens, in whose power subsidiary Kraft-Union the Shah also has interest. "If shares were available," commented a relationship with Iran, the company already has two owned subsidiaries in the country, in the transformer telephone equipment KWU itself signed a power station contract DM7bn. in July last year. In the interview, the Shah referred to Iran's readiness to help support enterprises needed capital injections, as to its desire to acquire experience in management and technology. But referring to KWU, he said he was not going to consider contributions towards past debts.

AMERICAN NEWS

New broking merger on Wall Street

BY STEWART FLEMING

NEW YORK, May 10.

TWO MORE Wall Street stock-brokers, Paine Webber Jackson and Curtis, one of the largest retail houses with branches across the country, and Mitchell Hutchins have agreed on a merger. Under the agreement, Mitchell Hutchins will retain its membership of the New York Stock Exchange and remain a separate company within the group. Mitchell Hutchins is a research-orientated group and the merger underlines the difficulties facing the more narrowly based brokerage houses in the face of rising costs and the abandoning two years ago of fixed commission. The cut in commissions in particular has stimulated a process

of consolidation on Wall Street which has led to a number of smaller research-orientated brokers joining with larger groups. Paine Webber has some 4,840 employees and a capital of \$110m. It will acquire Mitchell Hutchins, which has 410 employees of whom 28 are research analysts for \$6m. Convertible debentures. Over the past year Mitchell Hutchins has been in merger discussions with two larger brokerage or investment banking concerns, Loeb Rhoades, and Kuhn Loeb, but both proposals fell through. Earlier last week the Bache group, another leading brokerage and financial concern, announced an agreement in principle to acquire Company had first-quarter net income of \$40.7m., or \$1.35 a share, up from the year-earlier \$35.5m., or \$1.18 a share. Mr. Hoopman told shareholders that the company expects that the Brae field in the U.K. North Sea will be a commercial field. The company acquired a 33 per cent. interest in the field with the acquisition last year of Pan Ocean Oil Corporation. Am. Standard advance AMERICAN STANDARD net earnings in the first quarter were \$24m., or \$1.24 a share, against \$20.9m., or \$1.16 a share, in the same period last year. Sales were \$443.7m., compared with \$429m. The 1977 quarter net excludes \$8.6m. in extra-ordinary income tax credits. The company increased its quarterly dividend 5c to 42.5c. Cleveland N-plants CLEVELAND ELECTRIC ILLUMINATING COMPANY said it received a permission from the Nuclear Regulatory Commission to begin above-ground construction on two nuclear power plants, AP-DJ, has reported. The utility said work would begin immediately on the units, each with a generating capacity of 1,2m. kilowatts. Cleveland Electric has a 24 per cent. interest in the plants, some 35 miles north east of Cleveland, while Ohio Edison has a 36 per cent., Toledo Edison 20 per cent., Duquesne Light Company 14 per cent., and Pennsylvania Power Company 6 per cent. The first unit is scheduled for operation by end-1981, and the second by mid-1983. Below ground construction work began in October, 1974. Ralston purchase RALSTON PURINA Company said it has signed a definitive agreement to purchase Stratford of Texas's financial assets for \$35m. in cash and \$12m. of 10-year, non-interest bearing, non-negotiable notes, reports Reuter from St. Louis. Petrofina decline AMERICAN PETROFINA has reported a fall in first quarter net income to \$7.5m., or 70c. a share, in the same period last year. Gross revenue was \$268.7m. against \$255.5m. Mr. R. I. Galland the chairman, who had previously announced an expected decline in first quarter earnings, said that operations improved in March, but not sufficiently to offset "the adverse factors experienced earlier in the quarter."

Swiss Big Three start well

BY JOHN WICKS

ZURICH, May 9.

SWITZERLAND'S three biggest commercial banks have all reported satisfactory profit levels and a further rise in total assets for the first quarter of 1977. Earnings of Credit Suisse, Zurich, exceeded expectations in all categories for business, with gross profits up by more than 10 per cent. over the corresponding period of last year, while costs were kept within budgeted levels. Aggregate assets went up 2 per cent. over the end of 1976 to Sw.Frs.42.4bn., a rise of Sw.Frs.700m. in outstanding loans to Sw.Frs.18.4bn. being due mainly to higher export trade financing and advances to public authorities. Securities holding rose by Sw.Frs.425m. to Sw.Frs.2.88bn. With regard to the major losses of the bank's Chiasso branch, reported in the current quarter, Credit Suisse says no major withdrawals were registered overall in April. Relying upon the bank's "considerable secondary liquidity reserves," Credit Suisse has taken what it calls precautionary measures to strengthen cash holdings. Some days ago, Credit Suisse assured the public that the Chiasso affair would not lead to a change in its dividend policy. Union Bank of Switzerland, said there had been some minor losses of Zurich, experienced a continuation of satisfactory business development in the first quarter, with results rather

U.K. banks join SWIFT

BY DAVID BUCHAN

BRUSSELS, May 9.

THE BIG FOUR U.K. clearing banks and the Bank of England to-day took part in the first day's operation of the computerised system for international payments that the Brussels-based Society for Worldwide Interbank Financial Telecommunications (SWIFT) has "officially" put into action after four years of development. SWIFT officials in Brussels also of Zurich, experienced a continuation of satisfactory business development in the first quarter, with results rather as against the 300,300 messages a day they hope the system will bear when fully operative by nearly 500 banks in 17 countries. Three weeks ago it was deduced that the national "cutover" for the British banks was postponed until July 18, as some 25 French and German banks to "go live" to-day. But it was left open to banks, who all have the system and computer terminals installed to plug into the SWIFT system earlier, in all 18 Bank did so to-day.

French fertiliser industry plan

BY DAVID CURRY

PARIS, May 9.

THE FRENCH Government has taken the first step towards regrouping the loss-making fertiliser industry by announcing the merger of two State-controlled companies. Negotiations are well advanced towards the parallel creation of a big private sector fertiliser group, the object of Government policy being to re-organise the industry around two large enterprises, one private and one public. The two State-owned concerns contributing to the first move in this direction are the coal-mining concern Charbonnages de France, via its subsidiary CDF-Houilleres de Bassin (57 per cent.) and Saarberwerke (15 per cent.) and Entrepriese cent.). Collaboration between the State-owned companies will stop at fertilisers. The idea of the industry has suggested they should extend co-operation to potash, animal feedstuffs and fertiliser services. But even without the new unit will take on a total of some Frs.1,640m. a 3 per cent. of CDF and APC. The 35 per cent. EMC stake in the merged unit, CDF-Chimie will entail a proportionate reduction in the holdings of the present shareholders which are Charbonnages de France itself (35 per cent.)

LE NICKEL-SLN SOCIÉTÉ MÉTALLURGIQUE LE NICKEL-SLN

U.S. \$60,000,000 MEDIUM TERM LOAN

- Managed by BANQUE ROTHSCHILD, BANQUE NATIONALE DE PARIS, BANQUE BRUXELLES LAMBERT, BANQUE DE L'INDOCHINE ET DE SUEZ, TORONTO DOMINION BANK

- Bank of Montreal, Bank of Scotland, Banque Française du Commerce Extérieur, Banque Internationale à Luxembourg S.A., Banque de Paris et des Pays-Bas, Banque Rothschild, Banque Worms, Compagnie Financière, Crédit du Nord, Société Générale, Wells Fargo Limited

- Bank Oppenheim Pierson International S.A., Banque Bruxelles Lambert S.A., Banque de l'Indochine et de Suez, Banque Nationale de Paris, Banque Rivaud, Banque de l'Union Européenne, Canadian Imperial Bank of Commerce, Crédit Industriel et Commercial, The Royal Bank of Canada (France), Toronto Dominion Bank, World Bank Corporation (Wobaco)

Agent BANQUE ROTHSCHILD



April 1977

C.A. Venezolana de Desarrollo Sociedad Financiera U.S. \$12,000,000 Six-year loan

- managed by Manufacturers Hanover Limited provided by Bank of Montreal, European Arab Bank (Brussels) S.A., The First National Bank of Boston, International Mexican Bank Limited - INTERMEX - Manufacturers Hanover Limited, Manufacturers Hanover Trust Company, National Bank of North America, The Northern Trust Company, Security Pacific Bank

May, 1977

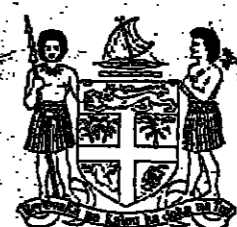
EUROBONDS Dollar stocks weaken

By Mary Campbell

THE DOLLAR sectors of the Eurobond market continued to weaken yesterday in quiet trading conditions. Two further issues have come out, one in floating U.S. dollars and another in Canadian dollars. The floater is for the Danish co-operative bank, Andelsbanken. It is \$30m. and offers the usual quarter point spread over six-month LIBOR. The minimum, however, is set at 64 per cent. higher than other recent bank issues. The maturity is seven years (bullet). The lead managers are S. G. Warburg and London and Continental Bankers (the consortium bank of which Andelsbanken is a shareholder). The Canadian dollar issue is Can\$25m. for the double-A rated Municipal Finance Authority of British Columbia. The 9 per cent. indicated coupon is offered for a choice of maturities—the issue maturity is 20 years but bondholders have the option to redeem after eight years and then every three years thereafter. There is no provision for the borrower to redeem before 1997 (except in the case of taxes being imposed).

BONDTRADE INDEX table with columns for Medium term, Long term, Convertible and rows for Yesterday and Friday.

This announcement appears as a matter of record only.



THE GOVERNMENT OF FIJI

U.S. \$10,000,000 Medium Term Loan

Managed by Orion Pacific Limited

Provided by

- Bank of America N.T. and S.A., Barclays Bank International Limited, BNS International (Hong Kong) Limited (a wholly owned subsidiary of The Bank of Nova Scotia), The Chase Manhattan Bank, N.A., Citicorp International Group, The Hongkong and Shanghai Banking Corporation, National Westminster Bank Group, Orion Banking Group, WestLB International S.A.

Agent for the Banks

Orion Pacific Limited

May 1977

Handwritten note: 100/100 1250

INTERNATIONAL FINANCIAL COMPANY NEWS

VME-Stork aid offer increased

BY MICHAEL VAN OS AMSTERDAM, May 9.

TER the Dutch RSV shipbuilding and heavy engineering company's successful bid for the financial support of the Dutch Government...

Financial problems at Kanematsu

BY CHARLES SMITH. TOKYO, May 9.

JAPAN's number eight general trading company Kanematsu-Gosho started talks six months ago with the Bank of Tokyo on ways to tide over its current financial difficulties...

Hutchison move to control Swift

BY JAMES FORTH SYDNEY, May 8.

IN A TWO-pronged move, the Hutchison International group of Hong Kong is moving to acquire outright control of Sydney-based manufacturing and trading group, Swift and Co.

S. AFRICA MONOPOLY POLICY

Tightening the rules

BY BERNARD SIMON IN JOHANNESBURG

AFTER MORE than two decades of only loose control over corporate competition, the South African Government is shortly to consider tighter anti-monopoly rules.

Asia \$ revival plan

BY H. F. LEE SINGAPORE, May 9.

NKS in Singapore together with the Monetary Authority of Singapore (MAS) will shortly be launching a fresh attempt to revive the market in the Asia dollar...

SELECTED EURODOLLAR BOND PRICES

Table with columns: Bid, Offer, Bond Name, Price. Includes sections for STRAIGHTS, FLOATING RATE NOTES, D-MARK BONDS, CONVERTIBLES.

Ovenstone payment

BY OUR OWN CORRESPONDENT JOHANNESBURG, May 9.

OVENSTONE INVESTMENTS, the Cape-based fishing conglomerate, has reduced its annual dividend from 10 cents to 8 cents a share.

\$522m. by rights at OUB

BY OUR OWN CORRESPONDENT SINGAPORE, May 9.

OVERSEAS UNION BANK changes follows closely the group's disclosure of improved outlook for last year.

World Banking Corporation S.A. Providing Worldwide Financing

A wholly owned Subsidiary of Wobaco Holding Company S.A. - Luxembourg. The Wobaco Group, Established 1963. Banking, Investment and Trust Offices: Luxembourg, Nassau, London, Grand Cayman, Jersey.

Can. \$25,000,000 Manufacturers Hanover Leasing Canada Limited. 8 1/2% Guaranteed Notes due May 15, 1982. Unconditionally Guaranteed as to Payment of Principal and Interest by Manufacturers Hanover Corporation. Lists various international banks and financial institutions.

WALL STREET OVERSEAS MARKETS FOREIGN EXCHANGE \$ & £ improve GOLD MARKET

BY OUR WALL STREET CORRESPONDENT

FURTHER SMALL losses were recorded on Wall Street today following additional high profit-taking. The Dow Jones Industrial Average lost another 3.65 to 252.00 and the NYSE All Common Index shed 10 cents to 854.15.

A price increase by U.S. Steel \$1 to \$20.00 on Pacific Holding aggravated Wall Street's concern about inflation today. Last Friday, Public Steel, the nation's fourth largest steelmaker, moved to higher prices for its products.

Although the Council on Wage and Price Stability avoided direct characterization of the U.S. Steel action as good or bad, analysts said the higher steel prices — if they stick — are likely to make cars and major appliances, more expensive later this year.

Investor confidence was already shaken last Friday when the Government reported a 13.2 per cent. rise in the April Wholesale Price Index.

International Mining jumped another 1.44m. shares to 152.23m. A price increase by U.S. Steel \$1 to \$20.00 on Pacific Holding aggravated Wall Street's concern about inflation today.

AMSTERDAM—Shares fell over a broad front, with Hoogovens down Fls.1.4 to Fls.38.6 in Dutch Internationals.

BRUSSELS—Mostly lower in a quiet market. In Foreign stocks, U.K. German and Canadian shares were lower.

VIENNA—Quietly steady. OSLO—Industrials and Bankings were slightly easier, while Insurance and Shipping were quiet.

MILAN—Irregularly lower, with operators very cautious on the continuing uncertain political situation. Bonds were again narrowly mixed in quiet trading.

TOKYO—Prices dipped in moderate trading. Volume 160m shares. Patrols, Pharmaceuticals and some Motors were lower.

STOCKHOLM—Shares were quiet. Copenhagen was steady. Oslo was mixed.

PARIS—Generally lower following the rise in Call Money to 9 per cent. and an Opinion Poll showing increasing disillusionment with French economic policy.

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MONDAY'S ACTIVE STOCKS

Table with columns: Stock Name, Price, Change. Includes International Mining, U.S. Steel, etc.

OTHER MARKETS

Canada moves up. The cut in Canadian bank rate from 8 to 7.5 per cent. and the

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NEW YORK, May 9. COPENHAGEN—Generally higher in moderate dealings.

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FOREIGN EXCHANGE

Table showing exchange rates for Gold, Silver, and various currencies.

FOREIGN EXCHANGES

Table with columns: City, Rate, Change. Includes New York, London, etc.

OTHER MARKETS

Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Denmark, Ecuador, Finland, France, Germany, Greece, Hong Kong, India, Indonesia, Italy, Japan, Korea, Kuwait, Lebanon, Libya, Luxembourg, Malaysia, Mexico, Monaco, Netherlands, New Zealand, Norway, Oman, Pakistan, Panama, Peru, Philippines, Portugal, Saudi Arabia, Singapore, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, Turkey, U.A.E., U.K., U.S., Venezuela, Yugoslavia, Zaire.

Exchange Cross-Rates

Table showing cross-rates between major currencies like USD, GBP, JPY, etc.

EURO-CURRENCY INTEREST RATES

Table showing interest rates for various Euro-currency deposits.

FORWARD RATES

Table showing forward rates for various currencies.

BRASIL

Table showing market data for Brazil.

JOHANNESBURG

Table showing market data for Johannesburg.

INDUSTRIALS

Table showing industrial share prices.

PARIS

Table showing market data for Paris.

STOCKHOLM

Table showing market data for Stockholm.

MILAN

Table showing market data for Milan.

VIENNA

Table showing market data for Vienna.

AMSTERDAM

Table showing market data for Amsterdam.

COPENHAGEN

Table showing market data for Copenhagen.

Handwritten scribbles and marks at the bottom of the page.

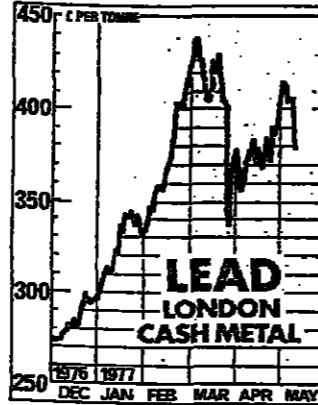
FARMING AND RAW MATERIALS

Hong Kong starts trade in futures

PHIL BOWRING
HONG KONG, May 9.
FOR SOME four years discus-
and preparation, the Hong
Commodities Futures Ex-
change opened today, trading in
an. It was a quiet start with
totaling just 148 lots of
sales—less than 2 per cent
lost active trading was in
December where delivery
which followed those of
day's close in New York, after
into account differences of
lost active trading was in
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December where delivery
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day's close in New York, after
into account differences of

Heavy drop in lead hits London metal markets

BY JOHN EDWARDS, COMMODITIES EDITOR
A SURPRISE fall in lead prices
triggered off a general decline
on the London Metal Exchange
yesterday. Lead, suffered the
biggest decline in percentage
terms with the cash price drop-
ping by £27.75 to £501.25 a tonne.
Cash tin lost £9.5 to £5,665 a
tonne, despite a rise in the
Penang market over the week-
end. Cash zinc eased by £6 to
£27.5 a tonne, and cash copper
wirebars £3.25 to £501.25 a tonne.



result of an excess of specula-
tive enthusiasm. Buying interest
was not helped either by the
higher-than-expected rise in LME
warehouse stocks of lead, up by
before rallying in later trading.
Trading activity in copper was
quiet. The fall in lead over-
shadowed the unexpected decline
in copper stocks, that were 325
tonnes lower at 617,000 tonnes
with a rise of around 1,000
tonnes had generally been fore-
cast on Friday.

Beef shortage warning

THE COMMON MARKET levy
being imposed on the U.K.
from non-EEC countries could
be a severe shortage of
beef later this year, Mr. George
Jemmis, newly elected presi-
dent of the National Federation
of Dairy Traders, said today.
He told the federation's
annual conference at Harrogate
that the levy would mean a
shortage of beef imports from
outside the U.K. and Ireland.

Call to ban NZ dairy import

BY OUR COMMODITIES STAFF
A CALL for a complete ban on
all New Zealand butter and
cheese imports to Britain was
made yesterday by the Dairy
Trade Federation. The demand
was strongly backed by Ireland
which has long been a rival of
New Zealand in the dairy market.
But it was later described as
"irresponsible" and "out-
rageous" by the New Zealand
Dairy Board, Mr. John Silkin,
Minister of Agriculture, also
attacked the appeal.

Cheddar cheese to the U.K.
would stop and its butter
imports would do the same from
January, 1981.
"We know that New Zealand
will fight for a renewal of these
supply allocations but it must
be right that the British market
is reserved for EEC suppliers,"
said Mr. Joe McGough, managing
director of the Irish Dairy Board,
said that as a result of New
Zealand allocations, Ireland itself
had on occasions lost a share of
the British market.

New Zealand was one of the
world's best wheat producers
of dairy products producing
butter and cheese at lower cost
than any European country, he
pointed out.

Tea prices continue to decline

BY Peter Bullen
TEA PRICES continued to
decline at the London auctions
following the previous
week's falls of 13p to 25p a
kilo demand for most teas was
still weak at the Tea Brokers'
Association auctions yesterday
and quality tea fell 25p to
£20.5 a kilo, medium by 15p to
£19.5 and by 5p to 19p a
kilo. Many lots were not
sold and were taken out.

U.K. MARKETING BOARDS

EEC hurdles still to be cleared

BY JOHN CHERRINGTON, AGRICULTURE CORRESPONDENT
THERE ARE eight statutory
marketing boards for agricul-
tural products in the United
Kingdom. Five of them handle
the bulk of the produce which
is done in the past, if such
control can be nullified by im-
ports. It is probable that the cost
of producing potatoes is similar
in most Community countries.
But in periods of market surplus
there would be no barrier to
prevent 'dumping' on the British
market, which could end up in
the UK Government footing
most of the bill by having to
implement a fall-back guarantee.
It is this fall-back which probably
restricts competition between
producers or groups of pro-
ducers and because they are
monopolies. At the end of the
transitional period next Decem-
ber 31, changes will have to be
made to fit them in with Com-
munity rules.

countries will lapse with the end
of the transitional period.
It is difficult to see how the
Board could control acreage as
has been done in the past, if such
control can be nullified by im-
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made to fit them in with Com-
munity rules.

about 25 per cent, or even less
in all other member countries
except Ireland. This means that
the great bulk of the distributive
trade, which buys supplies from
the Community, will be under the
system. It would be unlikely to
wish to rock the boat by
importing supplies even on a
marginal basis.
Distributors fear that if there
should be any increase in the
supply of milk, they would be
unable to maintain the down-
step delivery on which a
system almost unknown else-
where in the Community.
Farmers in the U.K. and Ireland
and elsewhere under the EEC
regime, there would be great
variations between farm prices.

Sharp falls in coffee and cocoa

BY OUR COMMODITIES STAFF
COFFEE PRICES continued their
downward trend on the London
Commodity Exchange yesterday,
with the second position
falling below £3,000 a tonne for
the first time since February.
July closed £50 down at £2,995 a
tonne, after trading at £3,195.
In fact the market moved up
strongly in the morning after
Friday's decline, but then
suddenly fell sharply on specula-
tive selling reflecting a down-
turn in New York.
There was a similar pattern in
cocoa futures. The July position
after opening the permissible
limit down, moved limit up and
reached £2,200 a tonne. But it
collapsed in the afternoon to
close £76.25 down at £2,097 a
tonne, breaking the £2,100 level
for the first time since mid-
January.

Hop quality

The Wool Marketing Board is
unlikely to be interfered with
there is no common policy
either for sheep-meat or wool
so far. Wool as an industrial
raw material does not receive
Community preferences. The
Wool Board's arrangements for
price support are, like the lamb
guarantee, funded by the British
Government and not by Feoga,
the Community Farm Fund.
The Hops Marketing Board,
which controls acreage and of
which membership is compul-
sory, has had an anxious time.
Hops have been in over-supply
recently in Europe where pro-
duction has not been controlled.
However, during the past month
the Council of Ministers agreed
on outline amendments to the
Common Hops Marketing Organi-
zation, which in effect will try
to control the quantity and the
quality of European hops by
aiding producer groups. As part
of these proceedings, the Hops
Marketing Board has gained
producer group status for itself
until 1980 with apparently all its
powers to be transferred to the
producers.

Ray of hope

Commission officials have said
that they are looking for a
ray of hope in the U.K. dairy
industry before the Board on a
voluntary, and not compulsory,
basis. There would be nothing
to prevent farmers forming the
Board, but it would be outside
groups of co-operatives, possibly
within the boundaries of the
existing national Boards. These
officials cannot understand why
the Boards do not trust farmers
to be loyal to them.

Direct sales

But there are obstacles. The
Commission in Brussels insists
that the Milk Boards must at
present constitute a legal entity.
Some sections of farmers here,
particularly near towns, might
if given the chance see advantages
in direct selling to distributors
and not having to have their
milk pooled with supplies from
farmers far away.
Some member countries—
especially Holland and Ireland
—could see advantages in send-
ing whole milk here for sale,
perhaps to supermarket chains.
There has been nothing to pre-
vent direct sales since the U.K.
joined the Community in
1973, except for rules on health
and hygiene.
That they have not succeeded
is due to the fact that U.K. milk
is principally directed at the
liquid market which takes 80 per
cent of all production against

U.S. CORN CROP MAY BE RECORD

WASHINGTON, May 9.
CORN (maize) production
in the U.S. this year may be a
record, according to a report
issued by the U.S. National Corn
Producers Association said here.
The report says the U.S. crop
is the same figure the USDA
forecasting.
The report says that the U.S.
crop is the same figure the
USDA forecasting.
The report says that the U.S.
crop is the same figure the
USDA forecasting.

Israeli citrus exports by air

BY OUR OWN CORRESPONDENT
TEL AVIV, May 9.
FOR THE FIRST TIME in its
history, the Israeli Citrus Market-
ing Board is airfreighting fruit to
European markets. The aim is to
supply fresh grapefruit well into
June, rather than withdrawing
fruit previously shipped by sea
and cold-stored in Europe.
This season, the shipments will
be on an experimental scale only
with only 500,000 tonnes ex-
ported in this way. The first ship-
ment of 100 tonnes was air-
lifted from Lod to Cologne airport last
night.

NEW HUNT SOYA AFFAIR MOVE

CHICAGO, May 9.
A Federal Appeals Court
reinstated an earlier court order
that prohibits the Hunt family
from taking delivery of more
than 300 bushels of soybeans
this month.
The Appeals Court overturned
a ruling by another Federal
judge that the family could
accept delivery on any or all of
the 7m bushels or so of beans
the family holds in May futures
contracts.

COMMODITY MARKET REPORTS AND PRICES

Table with columns for Commodity, Price, and Change. Includes sections for ASSE METALS, RUBBER, and SILVER.

Table with columns for Commodity, Price, and Change. Includes sections for COFFEE, SOYABEAN MEAL, and SUGAR.

Floor Trader & £5000. Ambitious young person, probably 20-25, with at least one year's experience on soles for excellent career position with a reputable firm of Commodity Brokers. Stephens Selection. 36 Dover Street, London W1X 3EA. 01-493 0617. Recruitment Consultants.

Table with columns for Commodity, Price, and Change. Includes sections for COCOA, GRAINS, and MEAT/VEGETABLES.

Table with columns for Commodity, Price, and Change. Includes sections for WOOL FUTURES, SOYABEAN MEAL, and SUGAR.

Table with columns for Commodity, Price, and Change. Includes sections for COCOA, GRAINS, and MEAT/VEGETABLES.

PRICE CHANGES

Table with columns for Commodity, Price, and Change. Includes sections for Metals, Grains, and Meats.

U.S. Markets

Table with columns for Commodity, Price, and Change. Includes sections for Soybeans and Copper.

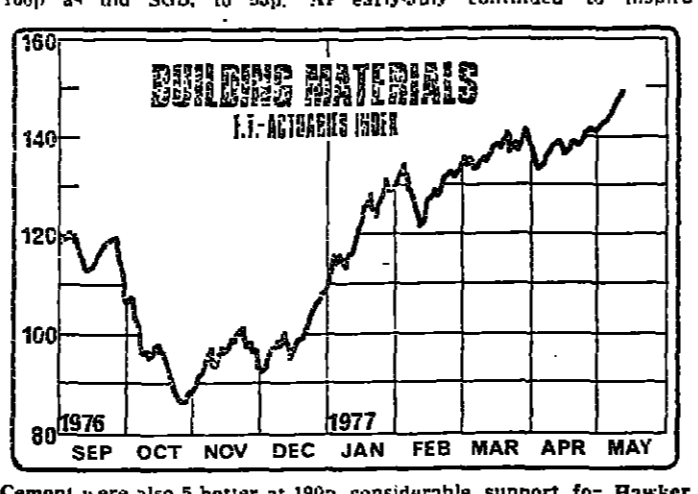
CLASSIFIED ADVERTISEMENT RATES. For further details write to: Classified Advertisement Manager, Financial Times, 10 Cannon Street, EC4P 4BY. Includes a form for advertising details.

Equities close at best after wholesale price indices
Share index up 4.1 at 454.2 and Gilts end above worst

Account Dealing Dates
First Dealing Last Account Dealing
23 May 3 May 6 May 17 May 19 May 19 May 20 May 21 May 21 Jun 9 Jun 10 Jun 21

together with early worries about the April wholesale price indices...
Home Banks active
The big four banks began the week actively and took last week's useful rally a stage further.

Travis and Arnold, which rose 11 to 107 on the earnings...
Gallenkamp up
Most of the rise in the miscellaneous industrial leaders took place in the late dealings.



considerable support for Hawker and John Finlay 4 higher at 250p...
Reyrolle good
Further noteworthy improvements were recorded in the Electrical sector.

stamp concern. Other issues, however, made fresh headway in active trading...
Properties firm
Selective buying interest was shown in the Property sector.

subdued mines
Mining share markets began the week on a subdued note with business down to a minimum.

Overseas Traders made modest headway...
Gilts above worst
Continuing uncertainty over the authorities' attitude towards short-term interest rate trends

FINANCIAL TIMES STOCK INDICES
Table with columns for various stock indices and their values.

HIGHS AND LOWS S.E. ACTIVITY
Table showing high and low prices for various stocks and S.E. activity.

WE CAN CUT YOUR COMPANY'S COSTS
Have you ever calculated how much time and money is spent in setting up and administering your Company's charitable giving programme?

Shopkeepers' president
THE NATIONAL Chamber of Trade, regarding more than 250,000 shopkeepers throughout the country elected its first woman president.

BASE LENDING RATES
A.B.N. Bank 8 1/2%
Allied Irish Banks Ltd. 8 1/2%
American Express Bank 8 1/2%

RECENT ISSUES
Table listing recent issues of equities and fixed interest stocks.

RIGHTS OFFERS
Table listing rights offers for various companies.

ACTIVE STOCKS
Table listing active stocks with their current prices and changes.

OPTIONS TRADED
Table listing options traded with their respective prices and terms.

FT-ACTUARIES SHARE INDICES

These indices are the joint compilation of the Financial Times, the Institute of Actuaries and the Faculty of Actuaries

EQUITY GROUPS
Table showing equity groups and sub-sections with their respective indices and values.

FIXED INTEREST
Table showing fixed interest rates and yields for various instruments.

NEW HIGHS AND LOWS FOR 1977
Table listing new highs and lows for various stocks in 1977.

RISES AND FALLS YESTERDAY
Table showing the rises and falls of various stocks yesterday.

AUTHORISED UNIT TRUSTS

Table listing various unit trusts such as Brown Shipley & Co. Ltd., Henderson Administration, Piccadilly Unit Tr. Mgrs. Ltd., etc., with columns for fund names, managers, and performance metrics.

Unit Trust Notebook No.12 Withdrawal Plans

Withdrawal Plans offer unitholders regular payments combining income and capital from their unit trust investment. The minimum investment is usually £1,000. Unitholders can normally choose a rate of withdrawal between 4% and 10%.

Table listing various unit trusts under the 'Unit Trust Notebook' section, including Mercurius Fund Managers Ltd., M & G Group (UK) Ltd., etc., with columns for fund names and managers.

OFFSHORE AND OVERSEAS FUNDS

Table listing offshore and overseas funds such as Arbuthnot Securities (C.I.) Limited, Fidelity Mgmt. & Res. (Bda.) Ltd., Kemp-Cee Management Jersey Ltd., etc., with columns for fund names and managers.

INSURANCE, PROPERTY, BONDS

Table listing insurance, property, and bond services such as Abbey Life Assurance Co. Ltd., General Portfolio Life Ins. Co. Ltd., etc., with columns for company names and services.

Unit Trust Association, 18 Finsbury Circus, London EC2M 7JF Telephone 01-628 0871

CLAVE INVESTMENTS LIMITED, 1 Royal Exchange Ave., London EC3V 3LU, Tel: 01-233 1101

INSURANCE BASE RATES, Property Growth, Cannon Assurance, etc.

INDUSTRIALS (Miscel)

Table of industrial stocks including companies like A.A. Smith, A.P. Smith, and various engineering firms. Columns include stock name, price, and other financial metrics.

ENGINEERING-Continued

Continuation of engineering stocks table, listing companies such as Balfour Beatty, British Steel, and various engineering contractors.

FOOD, GROCERIES, ETC.

Table of food and grocery stocks, including companies like Asda, Borden's, and various food processors.

DRAPERY AND STORES-Continued

Continuation of drapery and stores stocks table, listing retailers like Debenhams, Next, and others.

ELECTRICAL AND RADIO

Table of electrical and radio stocks, including companies like GEC, British Telecom, and various electronics manufacturers.

ENGINEERING, MACHINE TOOLS

Table of engineering and machine tools stocks, including companies like Birminghams, and various industrial machinery firms.

FT SHARE INFORMATION SERVICE

BUILDING INDUSTRY-Continued

Continuation of building industry stocks table, listing construction and building materials companies.

CHEMICALS, PLASTICS

Table of chemical and plastic stocks, including companies like ICI, British Petroleum, and various chemical manufacturers.

CINEMAS, THEATRES AND TV

Table of cinema, theatre, and television stocks, including companies like British Broadcasting Corporation and various entertainment firms.

DRAPERY AND STORES

Table of drapery and stores stocks, including retailers like Debenhams, Next, and various clothing stores.

CANADIANS

Table of Canadian stocks, including companies like Alcan, Inco, and various Canadian industrial firms.

BANKS AND HIRE PURCHASE

Table of bank and hire purchase stocks, including companies like Lloyds Bank, NatWest, and various financial institutions.

BEERS, WINES AND SPIRITS

Table of beer, wine, and spirit stocks, including companies like Carlsberg, Heineken, and various beverage manufacturers.

BUILDING INDUSTRY, TIMBER AND ROADS

Table of building industry, timber, and road stocks, including companies like Balfour Beatty and various construction firms.

Advertisement for 'Exporting is easier with PAYMENT IN STERLING' by International Factors Limited.

BRITISH FUNDS

Table of British funds, including various investment trusts and mutual funds.

INTERNATIONAL BANK

Table of international bank stocks, including companies like Citibank, HSBC, and various global financial institutions.

COMMONWEALTH & AFRICAN FUNDS

Table of commonwealth and African funds, including various investment trusts focused on emerging markets.

FOREIGN BONDS & RAIS

Table of foreign bonds and rais, including various international fixed income investments.

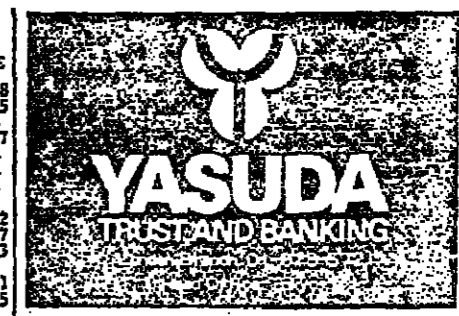
AMERICANS

Table of American stocks, including companies like IBM, General Electric, and various US industrial firms.

Conversion factor 6.5536 (0.0003)

Handwritten note: 100/100 1.50

Handwritten note: 'Joy in 1975'



MINES - Continued
CENTRAL AFRICAN
1977 Low Stock Price Div Yld (%)

AUSTRALIAN
1977 Low Stock Price Div Yld (%)
Copper, Tin, Zinc, Lead, Nickel, Silver, Uranium

TINS
1977 Low Stock Price Div Yld (%)
Various tin mining companies

COPPER
1977 Low Stock Price Div Yld (%)
Copper mining companies

MISCELLANEOUS
1977 Low Stock Price Div Yld (%)
Various small companies

NOTES
Unless otherwise indicated, prices are in pence and dividends are in pence per share

TEAS
India and Bangladesh
1977 Low Stock Price Div Yld (%)

SRI LANKA
1977 Low Stock Price Div Yld (%)
Sri Lanka mining companies

MINES
CENTRAL RAND
1977 Low Stock Price Div Yld (%)

EASTERN RAND
1977 Low Stock Price Div Yld (%)

FAR WEST RAND
1977 Low Stock Price Div Yld (%)

FINANCE
1977 Low Stock Price Div Yld (%)
Financial services companies

DIAMOND AND PLATINUM
1977 Low Stock Price Div Yld (%)
Diamond and platinum mining companies

INDUSTRIALS - Continued
Table listing various industrial companies with columns for Stock, Price, Div, Yld, etc.

MOTORS, AIRCRAFT TRADES
Table listing motor and aircraft related companies.

PROPERTY - Continued
Table listing property-related companies.

TRUSTS - Continued
Table listing trust companies.

SHOES AND LEATHER
Table listing shoe and leather companies.

SOUTH AFRICANS
Table listing South African companies.

NEWSPAPERS, PUBLISHERS
Table listing newspaper and publishing companies.

PAPER, PRINTING, ADVERTISING
Table listing paper, printing, and advertising companies.

TEXTILES
Table listing textile companies.

TOBACCO
Table listing tobacco companies.

TRUSTS, FINANCE, LAND
Table listing trusts, finance, and land companies.

INSURANCE
Table listing insurance companies.

REGIONAL MARKETS
Table listing regional market data.

OPTIONS
Table listing options data.

RECENT ISSUES AND RIGHTS
Table listing recent issues and rights.

RECENT ISSUES AND RIGHTS - Continued
Table listing recent issues and rights.

RECENT ISSUES AND RIGHTS - Continued
Table listing recent issues and rights.

RECENT ISSUES AND RIGHTS - Continued
Table listing recent issues and rights.

LINER-PLANT USED WORLD-WIDE The Liner Concrete Machinery Co. Ltd. Park Road, Gt. Wymondley, Cambs. CB23 9PB. Tel: 0622-77501

Steelmakers to re-draft price plan

BY IAN MARGREAVES

EUROPE'S steelmakers will meet in Brussels in the next few days to start re-drafting the first stage of the Davignon price-level plan...

France 'not bound by nuclear decisions'

BY REGINALD DALE, EUROPEAN EDITOR

FRANCE will not necessarily be bound by the conclusions of the new study group on nuclear non-proliferation which is to be set up after the week-end's Downing Street summit...

Dr. David Owen, British Foreign Secretary, is to brief Ministers from EEC countries who did not attend the Downing Street talks at a breakfast meeting in London this morning...



President Jimmy Carter is flanked by Mr. James Callaghan and Chancellor Helmut Schmidt at the end of a four-power meeting at 10 Downing Street yesterday.

West warns Russia over 1971 agreement on Berlin

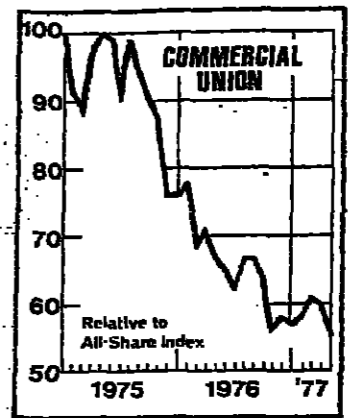
BY PAUL LENDVAI

THE three powers will continue to reject all attempts to put in question the rights and responsibilities which France, the U.S., the U.K. and the Soviet Union retain relating to Germany as a whole and to all four sectors of Berlin...

THE LEX COLUMN CU's road to recovery

After a brief hesitation around mid-day share prices continued to move higher yesterday and the number of bargains marked was the highest for a couple of months...

Index rose 4.1 to 454.2



First quarter figures from Commercial Union point to a substantial recovery in profitability in the current year...

Overall underwriting losses in 1977 could be roughly half last year's £58.5m, with most of the red numbers arising in the U.S. and on the continent...

banks which are likely to up the bulk of the funds. For the British Government scheme has obvious advantages...

Export Finance

The Government's decision last year to encourage U.K. export financing in foreign currencies, as opposed to sterling, has got off to a very slow start...

Weather

U.K. TO-DAY ENGLAND and Wales will start dry in E. Cloud in parts of W. will increase, with rain spreading E. during the day...

Minimum

The feeling from those countries which argue that the new EEC prices are too low is that Viscount Elwyn-Davies, the EEC Industry Commissioner, and his officials have made a miscalculation in setting reference levels.

Port Talbot strikers to consider talks offer

BY CHRISTIAN TYLER, LABOUR CORRESPONDENT

THE FIRST positive move for leaders had travelled to the weeks came yesterday in a strike which has shut the British Steel Corporation's big Port Talbot works in South Wales since the end of March.

Labour rebels firm on devolution Bill

BY RICHARD EVANS, LOBBY EDITOR

LABOUR REBELS on devolution and the Government stayed as far apart as ever last night after a special meeting called to discuss the resurrection of the Scotland and Wales Bill.

A dozen back-benchers, who led the successful rebellion against the devolution legislation in February, met Mr. Michael Foot, the Minister in charge of the Bill, to discuss its revival next session.

Rumours

The Government now seems certain of Liberal support for a strengthened Bill, but also needs a number of Labour rebels to capitulate before the legislation can succeed.

The meeting at the Commons failed to resolve the fundamental differences. The rebels had sought the meeting after rumours that the Government was ready to make devolution a conference issue next session.

50-nation link

BRITAIN yesterday became the first nation to have direct telephone dialling with 50 countries, with the introduction of International Direct Dialling to Jamaica, the Post Office said.

Big stores study Green Shield

By Elinor Goodman, Consumer Affairs Correspondent

INTERNATIONAL STORES, the British American Tobacco subsidiary, said yesterday that it is interested in taking up about 100 of the 700 Green Shield Trading Stamp franchises dropped by Tesco from June 8.

Even if both companies were to put stamps into all their stores, it would not compensate Green Shield for the loss of the Tesco business. The trading stamp company may, however, pick up customers among smaller, independent shops.

Vorster may make Namibia concession

BY QUENTIN PEEL WINDROEK, May 9

Government including representatives from each of 11 ethnic groups and established a second tier of ethnic representative councils retaining significant powers.

The leaders of the so-called Turnhalle Conference, including black, white and Coloured (mixed race) delegations, are asked instead to accept a transitional administration to include people from outside the conference.

In secrecy

BY QUENTIN PEEL WINDROEK, May 9

The talks with the diplomats, representing Britain, France, Canada, West Germany and the U.S., were held in strict secrecy, the delegations agreeing not to issue any substantive statements.

Leaders of both the Turnhalle and SWAPO's internal wing indicated some optimism. A SWAPO spokesman said the group was 'relatively satisfied' with the talks, which had been 'an exchange of views.'

Prime help local government

Can County Councils improve their borrowing requirements? Some Councils believe so and the 300 computer is already at work to save money and time.

Handwritten note: 10/5/77